# A Cognitive Topological Analysis of Metonymy Translation

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**Abstract:** *In the view of cognitive linguistics influenced by embodied philosophy, metonymy is defined as a fundamental cognitive mechanism, and translation is a cognitive activity. Conceptual metonymy exists in the entire process of cross-language transformation, and is the basic thinking mechanism to understand language metonymies. Looking at metonymy translation from the perspective of cognitive topology enlarges the interdisciplinary research vision of cognitive linguistics theory. It reveals that language also has features of topological equivalence and topological connectivity. Through the three main topological relations which are topological adjacency, topological association and topological inclusion, the connection between different parts of an Idealized Cognitive Model (ICM) and the referential relationships between a whole ICM and its parts can be clearly interpreted. These help us recognize the translator's cognitive operations in metonymy translation.*

## 1. INTRODUCTION

In the perspectives of empiricism, rationalism, and hermeneutics, the understanding of translation has undergone three distinct stages, focusing on the author, the text, and the reader (Wang, 2005). Each of these philosophical theories emphasizes only one aspect of the translation process and only explores the nature of translation at linguistic level. With the emergence of embodied philosophy, the limitations of these interpretations have become increasingly evident. Embodied philosophy first criticizes the objectivist philosophical views of empiricism and rationalism, arguing that translation is not simply about absolute reverence for the author or faithful reproduction of the text. Instead, it is a process of interactive communication among various translation subjects based on their own experiences. Furthermore, embodied philosophy also critiques some viewpoints from hermeneutics, such as freely creation in translation which completely departures from the original text (Wang, 2005). According to embodied philosophy, translation should not detach itself from the shared cognitive foundation that is from the common experiences of the translation subjects.

Based on embodied philosophy, the theory of cognitive linguistics has been proposed, taking translation from linguistic level to cognitive level. This theory posits that language is a product of cognition; the form of language reflects that how people cognize the world and their underlying cognitive mechanisms (Wang, 2007, pp. 8-12). The use of language is a cognitive activity based on humans' experiences. For example, we recognize that both time and money are of great value. Therefore, in language using, we apply concepts related to time to describe the "use of money", forming sentence like "I spent a lot of time studying." This reflects the connection between cognition and language usage. Translation, as an activity of transforming texts, may appear to involve textual processing, but fundamentally it is a cognitive activity. Translators inevitably incorporate their own life experiences and knowledge into the translation process, drawing on their vast cognitive resources. This process involves conceptual transformation and the processing and modification of objects' subjective representation. For example, in the Eskimo language, there is a large number of vocabulary related to snow. The reason behind this phenomenon lies not only in the unique word formation of the Eskimo language but also in the fact that the local people live within the Arctic Circle, surrounded by white snow throughout the year. Their observation and distinction of snow are more meticulous, which naturally manifests in their language. Due to the lack of similar living environments and experiences, we are unable to form a precise understanding of the objects being described. Therefore, when translating these words, we are unable to employ accurate language expressions. With the development of cognitive linguistics, scholars have begun to explore the operational principles of human cognition. In analyzing cognitive processes such as perceptual experience, image schemas, and conceptual systems, they gradually realize that metaphor and metonymy, previously seen as mere rhetorical devices, are actually conceptual phenomena inherent in cognitive activities. They directly influence the formation and understanding of concepts, and ultimately contribute to the development of language (Wen & Xiao, 2020, pp. 38-44). It is evident that understanding translation solely from a linguistic perspective or viewing metonymy from a rhetorical viewpoint is

insufficient. With the new interpretation of translation brought forth by experiential philosophy and the cognitive turn in metonymy research, it is necessary to reexamine the study of metonymy translation.

It is not uncommon to apply topological structures to language research. The development of cognitive linguistics and topology has provided a new perspective for exploring the cognitive mechanisms behind metonymy translation. While there have been studies focusing on conceptual metaphor from a cognitive topological perspective, there has been relatively less attention given to conceptual metonymy. Several scholars have already pointed out that metonymy is a more fundamental cognitive mode than metaphor (Wang, 2007; Wen & Xiao, 2020). Therefore, applying cognitive topology in the analysis of metonymy translation examples can help explore the underlying cognitive processes, enrich the research field of metonymy translation, and have a positive impact on interdisciplinary studies in translation.

## 2. METONYMY TRANSLATION THROUGH THE LENS OF EMBODIED COGNITION

### 2.1 Embodied Philosophy Foundation of Conceptual Metonymy

Cognitive linguistics posits that language is based on experiential understanding of reality, which is then cognitively processed to solidify thoughts. Human cognition of the world originates from sensory and perceptual experiences, which are then abstracted through cognitive processing to form image schemas. These schemas, comprising cognitive models (CM) such as metaphorical models, metonymic models, and propositional models, constitute the Idealized Cognitive Model (ICM). This forms the foundation for categorization and conceptualization, and then gives rise to meaning. Ultimately, meaning is established through language (Wang, 2007, p. 171). Within a shared cultural background, ICM represents the shared abstract understanding of knowledge and experience. Lakoff (1987) argues that ICM help categorize, organize concepts, and understand the world. The principle of metonymic mapping, as mentioned earlier, is one of the principles underlying ICM. It emphasizes our tendency to understand the whole or other parts of the whole by easily perceived and comprehended parts within the same cognitive domain (Wang, 2007). Radden and Kövecses (1999) provide a more comprehensive definition, stating that a conceptual entity (target) creates a mental pathway for another conceptual entity (source) within the same ICM. From this perspective, metonymy is not merely a rhetorical device at the linguistic level but also a cognitive mechanism that helps us conceptualize, reason, and comprehend abstract concepts. When we say, "I'll go and see if the rice is cooked," in addition to observation, actually we use other sensory experiences such as smell, taste, and touch. "Seeing" is the most salient and prominent sensory action within this behavior, so we use "see" to refer to the entire action that encompasses other sensory experiences in our linguistic expression. Based on our experiences, we form image schemas, which, through metaphoric or metonymic processes, expand into more abstract and complex categories and concepts, shaping our conceptual structure. This is the process of language formation. Thus, metonymy serves as the foundation for our understanding of the world and our use of language. After Lakoff, Wang (2007, p. 236) even goes so far as to state that "metonymy is something we live by."

### 2.2 Cognition, Metonymy and Translation

From the perspective of cognitive linguistics, translation is also a cognitive activity that manifests not only as external linguistic behavior and linguistic facts but also reflects the "internal psychological mechanisms of interlingual transfer conducted by translators and the cognitive processes of linguistic information processing" (Lu, 2013, p. 608). Wang (2005) proposed the concept of cognitive translation theory based on key viewpoints such as embodiment, interactivity, categorization, metaphor, metonymy, and construal. Starting from a macroscopic perspective, an attempt was made to formulate a cognitive linguistic model of translation, suggesting that translation originates from the translator's understanding of the source discourse, and understanding inevitably comes from their experience and cognition of the real world. In explaining the new research paradigm of cognitive translation studies, Wen (2018) points out that in the translation process, if the translator and the author have the same experience of something, the translator can accurately understand the author's intention and provide an accurate translation. This research perspective, which is based on the experiential view of cognitive linguistics, inspires us to explore the essence, principles, and methods of translation. Therefore, translation may appear to involve processing of words, but it actually is a mental activity that involves the transformation of categories and concepts, as well as the subjective representation and processing of objects. It is based on the cognitive subjects' experience of the real world, formed through interaction between different subjects, and have features of subjective processing and creation.

Since translation is considered a cognitive activity, it undoubtedly possesses the characteristic of metonymy. Some scholars argue that in the process of translation, "the meaning of the source text cannot be fully expressed in the target text; the target text can only be a subjective representation of the meaning of the source text" (Wen & Xiao, 2020, p. 58). Therefore, translators need to make choices, emphasizing and highlighting certain aspects of the source text, which reflects the metonymic thinking of "part for whole" (Wen & Xiao, 2020, p. 58). In the process of cross-language transfer, translators undoubtedly employ the thinking mode of conceptual metonymy.

**2.3 Cognitive Mechanism of Metonymy Translation**

We have established a theoretical connection between conceptual metonymy and translation based on the shared characteristic of embodied cognition. Metonymic thinking accompanies the entire process of translation, and even when discussing the translation of specific language metonymies, we cannot simply stay at the level of rhetoric. Instead, we need to explore the cognitive mechanisms behind the translation. From the perspective of literary text propagation, Tymoczko (1999) discusses the importance of metonymy in translation for constructing representations of history, culture, values, or literary forms. For readers, translation involves selecting representative parts and attributes to represent the whole, thus constructing a source text, a culture, or even a nation in a metonymic manner. She believes that any translation activity unavoidably involves the loss or addition of certain information, and it is impossible to fully translate all the information from the source text. The phenomenon of parts representing the whole or whole representing its parts is inevitable (Tymoczko, 1999). However, this does not mean that translation falls into the vortex of "untranslatability." With the deepening interaction among translation subjects, the resources that can serve as a common cognitive basis will become richer. Different translators' works and the translations of the same translator at different times will vary. In the end, the translated work can be enriched to the maximum extent and infinitely approach the original text. Denroche (2014), in the research on enriching translation theory using metonymic thinking, points out that translators need to understand the meaning of the source text, activate the vocabulary bank through a metonymic framework, choose appropriate target language expressions, and refine the translation through modifying sentences. Metonymic thinking plays an important role throughout this process. From these studies, we can see that metonymy is a fundamental way of thinking at the macro-cultural value level as well as the micro-language level of translation.

Having discussed the metonymic cognitive thinking in translation, let's now explore how to understand the translation of metonymies in terms of linguistic form. Rhetoric considers metonymy as a description of the association between things, a substitution of words for words. However, from the perspective of cognitive linguistics, we can see the cognitive basis—conceptual metonymy—behind this referential relationship. See the translation example. "She married money" is translated in Chinese as "她嫁给了一个有钱人" (She married a wealthy person). In the original text, "money" is the most prominent feature, but it actually refers to the owner of the money— "a person with money." Both money and the person are participants in the event "She married money," representing a case of part representing part metonymy. Recognizing this conceptual metonymy is essential for producing the above translation. Therefore, conceptual metonymy serves as the foundation for understanding specific language metonymies (Lu, 2011). Knowing this can help us better understand the cognitive operations of translators in translation.

Now we can see that when discussing the cognitive routes of metonymy translation, it actually discusses two situations. When we examine the metonymic attributes between the conceptual structures of the source language and the target language at a macro level, we are referring to a fundamental component of the human conceptual system. It is a mode of metonymic thinking that permeates the entire translation process, involving cognitive reasoning patterns such as parts representing whole, whole representing its parts, and parts representing parts. However, when we shift our focus to the specific metonymy expressions in language, we are discussing the cognitive process of translators when translating language metonymies. At this point, metonymy is no longer a simple rhetorical phenomenon but a specific cognitive operational means. In either case, conceptual metonymy plays an important role in the interaction between thought and language, and this will be further explained in the translation examples that follow.

## 3. METONYMY TRANSLATION UNDER THE COGNITIVE TOPOLOGICAL PERSPECTIVE

As a branch of mathematics, topology primarily studies the properties of geometric figures that remain unchanged under continuous deformations. This characteristic is referred to as topological property. When humans try to

cognize things, they usually extract the most significant topological properties as a basis for identifying things and situations (Wen & Zhao, 2017). From the perspective of cognitive science, topology is also one of the fundamental cognitive abilities of humans. Brugman & Lakoff (1988) applied cognitive topology theory to explain the phenomenon of polysemy in words. They argued that the relationship between cognitive topological structures is constructed by the sensorimotor cognitive system of humans, which is distinct from semantic features. These structures possess inherent meanings and fixed structures. In comparison to the limitations of semantics, cognitive topological structures exhibit analogical properties, thus overcoming the shortcomings of semantic feature analysis in explaining the generation of natural language semantics. Besides playing a role at the semantic level, topological structures are also present in conceptual thinking at macro level. Wen Xu and Zhao Genglin (2017) combined cognitive linguistics with topology, proposing cognitive topological linguistics and stating that it represents a new thinking mode and methodology following the views of embodiment, attention, and prominence in cognitive linguistics, which contributes to the expansion of the theory itself. As another route of cognitive linguistic research, the perspective of cognitive topology provides a new viewpoint for interpreting metonymy translation. Human cognition exhibits topological characteristics, and by understanding the topological nature of language from a spatial cognitive perspective, we can find out that language schematizes real space through topological space. Similar to mathematical topology, language also possesses features such as topological equivalence and topological connectivity (Wen & Zhao, 2017).

## 3.1 Topological Equivalence and Language Transformation

In the study of the topological properties of geometric figures, scholars have discovered that many different shapes are actually topologically equivalent. When a geometric figure is stretched, shrunk, or undergoes arbitrary deformations, certain points remain unchanged. There exists a one-to-one correspondence between these points and the points after deformation, and the relative positions of these neighboring points remain unchanged (Wang et al., 2021). For example, a coffee mug with a handle and a donut can be regarded as two equivalent topological spaces. Although they have different shapes and materials in physical space, they both possess the topological property of containing a hole within the scope of topology. Therefore, they are considered equivalent (Zhang & Liu, 2019).

The characteristic of topological equivalence can also help us explain how languages are transformed through translation. Some scholars have incorporated topological equivalence into the interpretation of the translation process and found that if the target language contains the "most fundamental content or extremely similar ontological meaning" of the source language, regardless of the translation strategies employed by the translator, the processed text can have a topological equivalence relationship with the original text. This equivalence is a conceptual equivalence and does not strictly refer to a complete equivalence regarding all conditions and factors (Li, 2020, p. 124). For instance, when translating ancient Chinese into modern Chinese or translating sign language into spoken language, as long as the core components of the meaning are retained in the process of symbol transformation, "regardless of the extent of deformation in terms of form, temporal distance and spatial distance, they are considered equivalent" (Ding, 2010, p. 110).

## 3.2 Topological Connectivity and Conceptual Metonymy

As mentioned earlier, language topological spaces also exhibit the characteristic of topological connectivity, which can be used to explain conceptual metonymy that occurs within the same cognitive domain. In a conceptual framework, the elements are interconnected because there are one or more mental pathways that connect any two elements within the space. When a relevant linguistic information is input, it activates the entire topological structure (Wen & Zhao, 2017). For example, when hearing the word "Beijing", it will activate other related information within the mental topological space of "Beijing". A person who loves traveling may first activate information about tourist attractions such as "the Imperial Palace, Temple of Heaven, and Summer Palace." A food lover may first activate information about local food such as "Beijing roast duck, Zhajiangmian (noodles with ben paste), and Douzhi (fermented Bean Drink)." University students and faculty may first activate information like "Peking University and Tsinghua University." These interconnected elements constitute the overall mental topological space of "Beijing."

It is not difficult to find out that this cognitive approach, which involves activating other elements through a particular element in an assemblage, bears similarities to the definition of metonymy proposed by Radden and Kövecses (1999). Both approaches suggest that interconnected elements can create mental pathways between each other. For example, in metonymy, there is a common usage of interchanging parts and whole to refer to each other,

where a prominent term is used to refer to a less prominent one. This relies on the connectivity between two related cognitive domains, allowing the transition from one concept to another.

**3.3 Cognitive Operation of Metonymy Translation from a Topological Perspective**

Radden and Kövecses (1999) have provided a comprehensive and systematic classification of metonymy types based on different Idealized Cognitive Models (ICMs). They propose that metonymy includes both the metonymy between a whole and its parts and the one between different parts within a whole. They introduce two main conceptual configurations to summarize various metonymy types: "Whole ICM and its parts" and "Parts of an ICM" (Jin, 2017, p. 35). The first configuration generates metonymy by accessing the parts of an ICM through its whole. For example, when we say "He hit me," we are actually expressing that a part of him (his hand) hit me through the whole (him). The second configuration also produces metonymy by accessing one part of an ICM through another part. For instance, when we say "Healthy meal," we are actually referring to a balanced and nutritious diet that contributes to good health. "Healthy" represents the result it brings rather than describing the state of the food. Here, the close association between the result and the cause allows for mutual implication because they both belong to the same ICM.

Exploring the cognitive process of metonymy from the perspective of topology and interpreting the cognitive operations in translation provide a new theoretical perspective for the study of metonymy translation. It is known that different conceptual entities within the same ICM are interconnected, and we can activate one element through another one or activate the entire ICM. This bears similarity to spatial topological relationships. Topological relationships in mathematical concepts refer to the spatial connections between network structure elements such as nodes, arcs, and surfaces, mainly manifested as topological adjacency, topological association, and topological inclusion. The three types of relationships also exist in cognitive topological spaces, through which the cognitive mechanisms in metonymy translation can be better explained.

3.3.1 Topological Adjacency and the Generation of Metonymy

Topological adjacency exists between similar elements, such as between polygons or nodes within the same surface. It can explain the interconnectedness of different parts within an ICM through mental pathways. This will be explained by the following examples.

Example 1:
Source text: 空中楼阁
Target text: castles in the air

"空中楼阁"(kōngzhōnglóugé) is a Chinese phrase which means a loft suspended in mid-air. It metaphorically refers to something illusory or detached from reality, representing unreal or fanciful notions. When mentioning a typical architectural structure, it may activate the typical element "castle" in the mental topological space for Westerners. For Chinese people, it may activate the Chinese traditional architectural element "楼阁" (lóugé). Both are core concepts within the cognitive topological structure of typical architecture. Translators who are proficient in both English and Chinese have a mental topological space that includes the typical elements of "castle" and "楼阁" (lóugé). In the translation process, it is easy for them to establish a connection between the adjacent elements through the mental pathway within the same ICM. By metonymic thinking that involves using a part to refer to another, the translators accomplish the transformation from the source language to the target language.

Example 2:
Source text: 落汤鸡
Target text: a drowned rat

The literal meaning of "落汤鸡" (luòtāngjī) is a chicken that has fallen into water or is completely soaked. It metaphorically refers to a person who is drenched or completely soaked. Although involving different imagers, both "落汤鸡" and "a drowned rat" can activate the cognitive spatial structure of "being drenched with water" in different language cultures and establish potential connections with other elements in this space. Translators who are proficient in both languages have a richer information set in their mental topological space compared to those who only understand one language. Therefore, instead of translating "落汤鸡" as "a chicken in the water" literally, connecting the image with the related element "a drowned rat" in the translation by "part for part" metonymic

thinking aligns better with the cognitive habits of English native speakers.

3.3.2 Topological Association and the Generation of Metonymy

Topological association exists between different elements, often manifested as connections between nodes and edges, and between edges and faces. Within the same ICM, there are members from different levels of categories. They are often in relationships of inclusion and being included, and can establish associations and refer to each other in the cognitive topological space. See the following examples.

Example 3:
Source text: I've got a Ford.
Target text: 我有一辆福特汽车。

In the translator's mental cognitive space triggered by the word "Ford," there are different levels of category concepts such as "Ford Motor Company (福特汽车公司)" and "car (汽车)." Their relationship resemble the relationships between a face and its internal edges and nodes in a topological space. Since they are also interconnected, the translator can quickly associate "Ford" with "car," understanding the metonymy which uses the manufacturer to represent the product in this example, and complete the language transformation. Therefore, the sentence is translated into "我有一辆福特汽车" (I've got a Ford car).

Example 4:
Source text: Give me another glass.
Target text: 再给我一杯酒。

From a cognitive topological perspective, in the original text, "glass" as the container itself and the contents of the container are two closely connected concepts within the same mental topological space. Although containers are usually more prominent than their contents, our focus is often on the contents themselves. Therefore, in this context, recognizing the concept of "glass" inevitably accompanies the identification of the concept of "liquid" contained in the glass. If the sentence is translated word for word, the target text should be "再给我一杯/一个杯子" (Give me another glass/a glass). In this example, the translator establishes a connection between the two concepts in the cognitive topological space, thereby utilizing the metonymic representation of "杯" (glass) as "一杯酒" (a glass of wine) in the translation. Thus, the original text is translated as "再给我一杯酒" (Give me another glass of wine) rather than "再给我一杯/一个杯子".

3.3.3 Topological Inclusion and the Generation of Metonymy

Topological inclusion refers to the correspondence between points, arcs, and regions within the same topological domain. It can be used to explain the referential relationships between the overall ICM and its constituent parts in the cognitive space. See the following examples.

Example 5:
Source text: I can speak a little Chinese.
Target text: 我懂一点中文。

If we consider "understanding a language" as a topological domain within the cognitive space, then "listening, speaking, reading, and writing" are subdomains on this face, with the latter being included within the former. We can approach and activate the entire cognitive topological space through one of these subdomains. As the most prominent skill in language proficiency, "speaking" can provide a psychological pathway for comprehending "understanding a language." Clearly, in this example, the translator activates the entire event ICM by taking this psychological pathway, thereby using the metonymic representation of "说一点中文" (speak a little Chinese) as "懂一点中文" (understand a little Chinese) in the translation.

Example 6:
Source text: I have to grade hundreds of papers.
Target text: 我需要批改数百份试卷。

Langacker (2009, p. 43) argues that when readers comprehend the sentence "The cigarette in her mouth was unlit," the word "cigarette" actually activates the salient region of the cigarette, which is "one end of the cigarette"; while "mouth" activates "a segment of the lips." The sentence in Example 6 is similar with this. If we explain it from a cognitive topological perspective, "annotate, revise, comment, grade, etc." form a "polygon" that includes various actions involved in the process of grading papers. "Grade" represents the most salient "arc" on this polygon, while "annotate, revise, comment..." represent other "arcs" on the polygon. Since grading is the final and crucial part in paper grading process, the original text highlights the action of "grade" to refer to the series of actions. The translator approaches other arcs within the space through the "grade" arc, thus connecting the overall concept of "批改论文"(annotate, revise, comment on and grade papers). Thie is the metonymic operation employed in the translation.

From the above analysis, it can be observed that through a topological perspective of cognitive linguistics, we can have a clearer view of the cognitive routes taken by translators in accomplishing metonymy translation. It also enables us to find more specific points of reference when explaining the metonymic relationships between a whole and its parts, as well as between different parts within a whole.

## 4. CONCLUSION

Metonymy is a cognitive mechanism through which people understand the world. Whether we focus on the metonymic thinking mode in cross-language transfer or the translation issues of language metonymy, we should not only consider the correspondence between linguistic forms but also observe the interaction between thought and language from the perspective of embodied cognition. The topological view of cognitive linguistics provides a new entry point for interpreting metonymy translation. The core concept of topological equivalence can be used to explain the preservation and equivalent transformation of source meaning in the translation process. Topological connectivity helps us identify the interconnections and referential relationships between different concepts within the same cognitive space, which is the process of forming metonymy. The three main topological relationships - topological adjacency, topological association, and topological inclusion - illustrate the interrelated relationships between parts within an ICM, and the referential relationships between the ICM as a whole and its parts, defining the cognitive operations involved in metonymy translation. In the process of metonymy translation, regardless of the changes in linguistic forms, the core components of the source concept are manifested in the target concept, which is determined by the topological nature of human cognition. Applying the theory of cognitive topology to the analysis of metonymy translation examples helps explore the cognitive operations behind metonymy translation, enriches the research field, and provides valuable insights for interdisciplinary studies on translation.

## REFERENCES

[1]   Wang, Y. A cognitive linguistic view on translation. Chinese Translators Journal, 2005(05), 15-20. (In Chinese)
[2]   Wang, Y. Cognitive linguistics. Shanghai Foreign Language Education Press.2007. (In Chinese)
[3]   Wen, X., & Xiao, K. R. Cognitive translatology. Peking University Press.2020. (In Chinese)
[4]   Lakoff, G. Women, fire, and dangerous things: what categories reveal about the mind. University of Chicago Press.1987.
[5]   Radden, G., & Kövecses, Z. Towards a theory of metonymy. Metonymy In Language and Thought, 1999,4, 17-60.
[6]   Lu, W. Z., & Wang, F. X. A new paradigm in translation studies: an overview of cognitive translation studies research. Foreign Language Teaching and Research, 2013,45(04): 606-616. (In Chinese)
[7]   Wen, X. Cognitive translatology: a new paradigm of translation studies. English Studies, 2018(02), 103-113. (In Chinese)
[8]   Tymoczko, M. Translation in a postcolonial context: Early Irish literature in English translation. Routledge.1999.
[9]   Denroche, C. Metonymy and language: A new theory of linguistic processing. Routledge. 2014.
[10]  Lu, W. Z. Understanding and translation of metonymy. Chinese Translators Journal, 2011,32(02): 64-67. (In Chinese)
[11]  Wen, X., & Zhao, G. L. Cognitive topological linguistics: a new trend of cognitive linguistics. Journal of Northeast Normal University (Philosophy and Social Sciences), 2017(04): 2-6. (In Chinese)
[12]  Brugman, C., & Lakoff, G. Cognitive topology and lexical networks. In S. L. Small, G. W. Cottrell & M. K. Tanenhaus (Eds.), Lexical ambiguity resolution ,1988(pp. 477-508). Morgan Kaufmann.

[13] Wang, Y. D., Liu, Y. H., & Zhang X. M. Cognitive topological dimensionality study of metaphor, metonymy, and metaphor-metonymy blends. Foreign Languages Research, 2021,38(04):18-22+30. (In Chinese)

[14] Zhang, X. M, & Liu, Y. H. A cognitive-topological study of the semantic triangle. Foreign Language Research, 2019(02): 8-14. (In Chinese)

[15] Li, J. S. An analysis of translation mechanism from the perspective of topology. Journal of Shenyang Normal University (Social Science Edition), 2020,44(01): 123-128. (In Chinese)

[16] Ding, X. H. Examining "equivalence" in translation from a topological perspective. Gansu Social Sciences, 2010(06): 109-111. (In Chinese)

[17] Jin, S. X. A study of the translation of metonymies in classic Tang poems from the perspective of cognitive linguistics [Doctoral dissertation]. Northeast Normal University.2017. (In Chinese)

[18] Langacker, R. W. Investigations in cognitive grammar. Mouton de Gruyter.2009.