A Study of Cognitive Mechanism of Polysemy Word "Star" From the Perspective of Embodied Philosophy

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Embodied philosophy see metaphorical and metonymy thinking and language as grounded in the interactions between bodily experience, mind, and world. An important application of embodied philosophy is to explain the cognitive mechanism behind the generation of polysemy in language. As a crucial part of cognitive linguistics, conceptual metaphor and metonymy theory illustrates the progress of human's cognitive capacities essentially, i.e. from concrete and simple categories to abstract and complex categories. This paper advocates a method of seeking the relation between metonymy and metaphor in generating polysemic words to prove that embodied philosophy lays the philosophical theoretical foundation for language research, including the mechanism and specific methods of adopting this method. By examining the relation between metaphor and cognitive mind supported by embodied philosophy, the traditional view that language is autonomously generated can be eradicated. On the basis of previous researches, this paper adopts the mechanism of a continuum of metaphor and metonymy to illustrate polysemy through a case study of the word "Star" and analyzes the reflection of embodied philosophy in the generation of polysemy. The findings will bring certain advantages to the cognitive study of polysemy, to the research on interaction between metaphor and metonymy, and to the reflection of philosophy in language.

Keywords: metaphor, metonymy, polysemy, embodied philosophy

Introduction

In the second half of the last century, with the rise and spread of postmodern philosophical thought in the West, a group of philosophers and linguists were influenced by it and put forward the "embodied philosophy", arguing that categories, concepts, thinking, and reasoning are all based on and formed by the interactive experience and cognitive processing of body and the real world. In *Phénoménologie de la Perception* (1945), Merleau-Ponty asserted that the source of mind lies in the body, which is the core concept of phenomenology of perception. The constructivism proposed by Piaget (1970) holds that cognition comes from the interaction between subject and object. Phenomenology (also called body phenomenology) established by Schmitz (1980) emphasizes the study of people from the perspective of body perception and emotion. The internal realism proposed by Putnam (1980) advocates discussing realism from the subjective perspective of people. Based on these viewpoints, Lakoff and Johnson (L&J for short), in their masterpiece *Philosophy in the Flesh—The Embodied Mind and Its Challenge to Western Thought* (1999), elaborated "Embodied Philosophy" and discussed the three principles of "embodied mind, cognitive unconsciousness, and metaphorical thought". L&J stated that there is no ultimate separation of mind and body, and people are always "in touch" with the world

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through embodied acts and experiences. This concept deeply criticizes the metaphysical essentialism (the objective existence of absolute truth in the world) in the traditional philosophy, and counters the tendency of the logicists in the philosophy of language to "ignore the human factor". The embodied philosophy supports that there are both "objective" and "subjective" in human thinking, cognition, concept, and even language. It is said to be "objective" because human language and knowledge mainly come from "embodied experience"; it is said to be "subjective" because human language and knowledge also need to be processed cognitively. Embodied mind and cognitive processing are the two basic principles of Cognitive Linguistics (CL), which aims to explore the human characteristics and humanistic elements behind language, to explore how language is formed through embodied mind and cognition, to analyze the cognitive mechanism behind language expression, and to analyze people's cognition. Therefore, embodied philosophy laid the philosophical theoretical foundation for CL and ushered in a new era of linguistic research.

Conceptual metaphor theory is a particularly influential approach to embodied philosophy (Boroditsky & Ramscar, 2002; Gibbs, 2005; Landau, Meier, & Keefer, 2010; Wilson & Foglia, 2015). It is used to explain language phenomenon and cognitive experience behind language. As a common feature of language, polysemy attracts cognitive linguistics' attention. Most researches explained polysemy from metaphorical mechanism, but few focused on metonymy. This paper proposes that a continuum of metonymy and metaphor exists in the generation of polysemy words, and that the features of embodied philosophy can be reflected in the cognitive mechanism of polysemy, which is a method to make better sense of cognitive feature of polysemy.

Studies on Polysemy

Polysemy originated from "Polysemie" proposed by the French linguist M. Breal in 1897. Polysemy refers to lexical forms that correspond to two or more meanings, and there is a certain connection between these meanings. Over the years, this language phenomenon has aroused the research attention of many linguists at home and abroad, resulting in a large number of research results. In the 1930s, the German linguist Jost Trier applied the concept of semantic field to explain polysemy. Trier explained that the meanings of words are interrelated, and the study of word meanings must be studied in a word meaning system, and the word meanings cannot be studied in isolation, and words have meaning only as "a part of the whole", and words also have meaning only in the context of semantic existence, that is, the semantic field. The structuralist semantic field theory explains that polysemy is the result of the synchronicity of word meanings caused by the evolution of word meanings in the semantic field, but it does not explain the relationship between word meanings and the evolution mechanism and laws. In the 1950s, Chomsky tried to explore human language ability from the inside of language, and got rid of the limitation of structuralism to study language from the surface structure of language. But Chomsky studied language with a closed method, arguing that language is autonomous, which goes against the fundamental ideas of dialectics and dialectical materialism, as Geeraerts (2006) pointed out, Chomsky refused to engage in dialogue with psychology due to his preference for a strictly autonomous methodology. Therefore, the research on polysemy of words by the generative school is not thorough and has no explanatory power. In short, traditional polysemy research mainly emphasizes the relationship of words to the real world, arguing that meanings related to form are only stored as individual items in the mental vocabulary, ignoring the similarities and interrelationships between word meanings.

Linguists such as Lakoff and Johnson study polysemy from the perspective of cognitive linguistics. Lakoff (1980) argues that polysemy is the product of human cognitive conceptualization and categorization. A

category refers to a set of common features, which can be divided into cores and edges (Wang, 2005). The world is composed of various things, and under the interaction of subjective and objective, the classification process of different things is the so-called categorization process (Zhao, 2001). The extension of categories can be achieved through metaphor and metonymy. Metaphor and metonymy are ubiquitous phenomena in human language and are two deeply rooted cognitive mechanisms. Since the publication of *Metaphors We Live By* by Lakoff and Johnson (1980), the metaphorical cognition research on polysemy, especially of body language, has shown a surging trend, such as Lakoff and Johnson (1999), Goossens (1990), Goossens (1995), Croft (1993), Taylor (2002), and Barcelona (2000). Scholars at home and abroad have carried out researches on polysemy from various aspects, and have also achieved valuable results in some aspects, but these studies also have some shortcomings, mainly in the following aspects: (1) lack of research from metaphtonymy perspective. Most researches explained polysemy from either metaphorical or metonymy angle, but few focused on the continuum between the two; (2) lack of theoretical analysis of polysemy from the philosophical level. In view of the above limits, this paper attempts to conduct a metaphtonymy study of the polysemic word "Star" in English from the perspective of philosophy, aiming to provide strong support for the continuum between metaphor and metonymy in polysemic words and to enhance the relation between metaphtonymy and embodied philosophy.

Metaphtonymy Mechanism of the Polysemy Word "Star"

Barcelona (2000) argued that each metaphoric mapping presupposes a conceptually earlier metonymic mapping, which provides the rationale for the occurrence of metaphors. Radden (2000) also agreed with this point and proposed four situations for metonymy-based metaphors: (1) conceptual domains share a common empirical basis; (2) conceptual domains are linked through implicit meaning; (3) conceptual domains involve category structure; (4) conceptual domains are interconnected through a cultural pattern. Zhao Xuede (2010) pointed out that metaphor and metonymy are both basic models of semantic construction. Metonymy and metaphor form a connected system, that is, metonymy at the beginning, and metaphor at the other end. The metaphorical interaction is called metaphtonymy, in which the empirical basis and the abstract mechanism work together. Many other scholars, such as Radden (2000), Lu Jianming (2009), Zhang and Lu (2010) also pointed out that metaphor and metonymy respectively constitute two ends of a continuum.

The semantic network of the polysemic word "Star" is taken as an example to illustrate that the extension of word meaning is affected by two thinking structures: one is metonymy based on homology, proximity, and correlation, and the other is cross-domain, similarity-based metaphor. The two minds are on a continuum. In this research, the author manages to collect six meanings of the English word "Star" as a noun from *Oxford Academic Dictionary* and example sentences are also assigned accordingly to each meaning of "Star".

We can see from Table 1 that the first one is the word's ("Star") literal meaning, which denotes the salient feature of "Stars", that is, they are bright in the darkness and, thus, the highlights of the physical world at night. In the generation of the second meaning, referential metonymy is involved, where the shape of a "Star" stands for the "Star" itself. For the next four ones, metonymy happens first, that is, social world and physical world is whole and physical world stands for social world, belonging to the referential metonymy PART FOR PART. The metaphor "famous people or group is Star" happens next. The source domain is "Star" and the target domain is famous people or social groups. This metaphor is the idea that someone shines brightly like a "Star". They stand out and are above others, they shine, are bright, they sparkle, they are beautiful. They are a light in the dark. It can be said that they are famous, and known by many. Others may revolve around them. Besides,

Star's inaccessible feature is also mapped to the feature of famous people. Ralph Waldo Emerson wrote, "The 'Stars' awaken a certain reverence because though always present, they are inaccessible".

Table 1

Dictionary Meanings of "Star"

Meaning	Example sentence
1. [countable] a large ball of burning gas in space that we see as a point of light in the sky at night	The path of light from a distant star changes directions as it passes the sun.
2. [countable] an object, a decoration, a mark, etc., usually with five or six points, whose shape represents a star	Jews were forced to wear yellow stars.
3. [countable, usually singular] a mark that represents a star and tells you how good something is, especially a hotel or restaurant	Reviewers were asked to grade the book out of four stars.
4. [countable] a famous and excellent singer, performer, sports player, etc.	Fewers became a star of the London music hall.
5. [countable] a person who has the main part, or one of the main parts, in a film, play, etc.	The real star of the film is Hay Petrie.
6. [countable] a person or thing that is the best of a group	Plato's star pupil Aristotle founded the Lyceum.

The order of human cognition of the world is from familiar to unfamiliar. Therefore, the mechanism of word meaning extension is generally metonymy with homogeneous mapping first, and then metaphor with cross-domain mapping. Referring to the cognitive methods of Li and Wen (2006), the continuum can be drawn as follows:
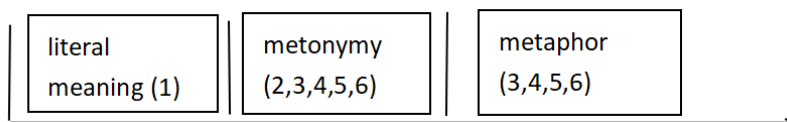

Figure 1. Chart of continuum of metaphtonymy mechanism of "Star".

Although metaphor and metonymy are divided into "two domains" and "one domain", in fact, it is difficult for "domain" to have a clear boundary, between "domain" and "domain". Metonymy and metaphor are interwoven and interpenetrated in the process of word meaning extension. Jakobson pointed out that "similarity is added to proximity, so any metonymy has a bit of metaphorical color, and any metaphor also has traces of metonymy" (quoted in Goossens, 2002:351). Goossens (1995; 2002) made a more specific summary of four relations between metaphor and metonymy: metaphor comes from metonymy; metaphor is in metonymy; metonymy is in metaphor; and the disappearance of metonymy. Zhang and Lu (2010) quoted Deignan's process of five steps: metonymy → metaphor in metonymy → metonymy in metaphor → metaphor based on metonymy → metaphor. This method is more specific, which believes that the extension of word meaning starts with metonymy and ends with metaphor, and metonymy and metaphor blend with each other to form a continuum.

Goossens's (1995; 2002) point of view can also be proved by Figure 1. This chart starts with metonymy. This is because metonymy occurs in the same domain, so metonymy is more basic than metaphor. Humans always start to recognize things that they are familiar with, and then there is a metaphorical extension across domains, which gradually extends to more abstract domains. In addition, from this figure, we can see that when the meaning item is extended by metonymy, the relationship between the meaning and the original meaning is relatively close, for metonymy is based on correlation and proximity. But the more it extends to the metaphor,

the greater the difference between the extended meaning and the original meaning, and some even enter the abstract domain, which is irrelevant to the source domain. On the one hand, these metaphorical items are far away from the source domain, and it is difficult to re-connect with the source domain; on the other hand, these metaphorical items are gradually fixed, and people can use them without any metaphorical thinking. Such metaphors often become "death metaphors".

Furthermore, this figure proves the rationality of the "literal-metonymy-metaphor" continuous system proposed by Taylor (1995), and supports the embodied philosophy expounded by Johnson and Lakoff. The extension of word meaning is not arbitrary, but is gradually extended outward on the basis of metaphor or metonymy. The extended meaning will be affected by many aspects such as culture, history, customs, and so on. The development of word meaning is synchronic and diachronic. From a diachronic point of view, the extension of word meaning should be infinite with the development of human cognition and the deepening of cognition of the objective world.

Metaphtonymy Mechanism of "Star" and Embodied Philosophy

In *Philosophy in the Flesh—The Embodied Mind and Its Challenge to Western Thought* (1999), L&J criticized the traditional philosophical view of ideology and rationalism, and established embodied philosophy, which emphasized that human cognition is related to motion experience, category structure, and image schema formed from interaction with the external world. In other words, knowledge of the objective world comes from experience of the real world, not from correspondence with external entities. Embodied philosophy advocates the interaction between human subjective cognitive factors and objective matters, in which objective matters are the basis of subjective cognitive factors. In this way, the world is not completely objective, because human interaction with the objective world forms subjective cognitive experience which plays a decisive role in the formation of human worldviews. Cognitive experience is the result of the experiential perceptual and cognitive movements in our constant interaction with the changing environment (Wang, 2007). In other words, experience is the subjective factor formed by the constant interaction between human beings and the objective environment. This point of view can be proved by tracking the etymology of "Star". The word's ("Star") astrological sense of "influence of planets and zodiac on human affairs" is recorded from mid-13c. Human world and the physical world are as a whole and interactive relation exists between them, which is the metaphtonymy origin of "Star".

Experience philosophy holds that all human concepts are rooted in our bodily experience. Humans did not have any (abstract) concepts in the early stages of evolution, so their way of perception was the physical senses. This perceptual ability is the survival instinct of living beings. Primitive humans had no language, no concepts, and no culture. Nevertheless, this sensory perception ability of primitive humans is the preliminaries or prelude to the ability of abstract cognitive concepts. Human cognitive conceptual capacity is originally a part of nature. This is why the philosophy of experience insists that the concept of cognition is rooted in the view of bodily experience.

The breadth and depth of human abstract (conceptual) thinking is unmatched by image (sensory) thinking. Only abstract language can make it possible for everyone to think abstractly. Some philosophers such as Wittgenstein (1953) believe that the abstract thinking of human categorization can only be carried out using language. Other animals and human infants cannot think (abstract) because they have no language. Piaget (1970) believed that children's initial thinking mode is sensorimotor, mainly based on image thinking. After

they have mastered the language completely, their thinking will become symbolic, abstract, conceptual, and perception will rise to cognition. Therefore, the development of people's abstract thinking ability lies in abstract language. Wittgenstein (1953) even said that thinking is language and language is thinking. Thinking is a misunderstood term because there is no such thing as thinking. Thinking is originally an illusion of people. Thinking is language use. The development of people's abstract thinking ability lies in the development of abstract language, mathematics, and other symbolic systems. After becoming abstract thinkers, people still retain the primary form of imagery thinking. We use both image thinking and abstract thinking. However, image thinking represents the appearance of things, and abstract thinking represents the essence of things. In other words, image thinking is a sensory experience, and abstract thinking is a metaphor for image thinking. Therefore, metaphor is essentially a kind of abstract thinking, because the medium of metaphor is language. Embodied philosophy held that metaphorical language is a reflection of metaphorical thinking; metaphorical thinking is conventional, not variant. A certain word that expresses the metaphorical meaning of a concept may lose its metaphorical meaning, yet its conceptual metaphors retain their vitality. In short, metaphorical features are not limited to philosophical thinking, but are true of all human abstract thinking. It is the most important way we understand experience. Therefore, behind the metaphtonymy mechanism of polysemy is the metaphtonymy thinking, which is closely related to bodily experience and abstract thinking.

Conclusion

On the basis of the application of cognitive linguistics, embodied philosophy and previous research, and through case study of the polysemic word "Star", the following research conclusions can be drawn:

(1) The cognitive mechanism of polysemy is metaphor and metonymy. The influence of metaphor on word meaning is radial, because the working mechanism of metaphor is based on similarity, while the impact of metonymy on word meaning is in a line, because the working mechanism of metonymy is based on correlation. But in fact, the expansion of word meaning is often a combination of the two. Polysemy is based on the prototype through the joint action of metaphor and metonymy. The evolution of word polysemy is not arbitrary, and there are inherent meanings between word meanings.

(2) The metaphtonymy mechanism of polysemy reflects metaphtonymy thinking supported by embodied philosophy. All human concepts are rooted in our bodily experience. In the process of knowing and interacting with the external world, the bodily experience obtained through the senses must be processed by language before it can become conceptual knowledge. What empirical knowledge corresponds to is not the world itself, but the position in a certain language system. Human knowledge of the external world—from non-concept, unconscious to conceptual, conscious, is the result of language acquisition and abstraction and conceptualization of language. The cognitive mechanism of polysemy is closely related to bodily experience and abstract thinking.

Compared with the existing research results, the innovation of this research is mainly reflected in two points. The first one is the research of interaction between metaphor and metonymy, which breaks the situation of emphasizing metaphor and neglecting metonymy in language study. The second one is a philosophical reflection on the cognitive mechanism of polysemy and, ultimately, illustration of the philosophical identity of metaphor, metonymy, and polysemy.

Although this research has made certain innovations and breakthroughs, it was found that this research still has room for further in-depth research, and at the same time there are certain limitations, which also provides a

certain research basis and research direction for further research. Although the corpus selected in this paper is the authoritative *Oxford English Dictionary* (9th edition), but the collection of word meanings in the dictionary has a certain lag, because word meanings are constantly changing and developing. Some new meanings may not be included, that is to say, some new meanings that have not been solidified into language meanings are not used as research objects. Furthermore, the revealing of embodied philosophy through language phenomena is not systematic enough. These are areas that need to be further improved.

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