

Cognitive Interpretation of Polysemy

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Abstract—Metaphor and metonymy serve as a cognitive means in polyseme acquisition. This paper aims at expounding their nature and mechanism in lexical sense extension, and exploring the effective way of polysemy interpretation from a cognitive perspective. A criterion of "knowing" a word is put forward.

Keywords—metaphor; metonymy; polysemy; vocabulary

I. INTRODUCTION

A polyseme is a word or phrase with distinct, but related senses. Loosely speaking, almost all the words in language are polysemous to a greater or lesser extent. Because a word possesses not only a literal meaning but also numerous non-literal meanings, one can never claim how many meanings a given word has. How to delimitate and distinguish the vague senses has been an interest among researchers, who interpret the relatedness and extension of the senses by use of metaphor, metonymy. Some treat the polysemous word as a single unitary structure — monosemy, while others construe the interrelated senses in a chain-like or radial way. Though all the above approaches are cognitively plausible, it is hard to reach a consensus. Etymologically some of the meanings change over time, and the diachronically changed meanings are no longer recognizable. As powerful tools of cognition, metonymy and metaphor are not primarily linguistic ornaments but also basic cognitive processes that are pervasive in both thought and perception. They offer mental access to the interpretation of the sense relationships in a lexical field along with image schema, which is frequently used in comprehending spatial prepositions. These studies have greatly enlarged the horizon of vocabulary learning. This paper proposes that a word should be taken as an overall concept, and all word senses are contextually dependent. The difficulty for an advanced learner lies in the study of figurative meanings. Finally, a criterion is put forward about "knowing" a word.

Concept is considered as an idea or a principle that is connected with something abstract. To understand a word, you have got to know its idea. Take the word "window" for instance, what is a window? Look at some of the basic meanings.

- a framework of wood or metal that contains a glass windowpane and is built into a wall or roof to admit light or air

- a transparent opening in a vehicle that allow vision out of the sides or back; usually is capable of being opened
- a transparent panel (as of an envelope) inserted in an otherwise opaque material
- an opening that resembles a window in appearance or function;" he could see them through a window in the trees"
- the time period that is considered best for starting or finishing something; "they had a window of less than an hour when an attack would have succeeded"
- a pane in a window;" the ball shattered the window"
- an opening in the wall of a building (usually to admit light and air);"he stuck his head in the window"
- (computer science) a rectangular part of a computer screen that contains a display different from the rest of the screen

Apparently, the above meanings of window are not exhaustive; it is very likely to trigger some specific senses for specific person.

What ideas does the word window occur to people? From the above commonly-used meanings, you may find the interconnections among these meanings. There is no doubt that all the meanings did not emerge at the same time, and which one is the basic one? And which are the extended ones? There is difficulty in identifying the correct time order of the individual means for most language learners, but the effort to figure out the relationship of the different meanings will surely be rewarding.

II. POLYSEMY

The term polysemy is derived from the Greek poly—meaning "many" and sem—meaning "sense" or "meaning". Thus the roots of the study of the complex relations between words and meanings lie in Greek philosophy. There are no doubt that polysemy is an open-ended and quite productive phenomenon in language. In the course of the 20th century, the focus of linguistic studies changed from a diachronic perspective to a synchronic perspective. However, polysemy played only a minor role in the structuralist tradition. Until the 1980s, linguists began to give their concern to cognitive lexicon.

A polyseme is a word or phrase with different, but related senses, leading to the ambiguity of an individual word or phrase that can be used in different contexts to express two or more different meanings. Since the test for polysemy is a vague concept of relatedness, judgments of polysemy can be very difficult to make. Because applying pre-existing words to new situations varies much from person to person.

Jorgenson (1990) asked speakers to distinguish senses of highly polysemous words, among others: head has 21 dictionary senses, life (18), world (14), way (12), and hand (12). The author found that the subjects in the test consistently refused to recognize more than about three senses, even after being shown the dictionary entries for polysemous words that differentiated a dozen or more senses. In the process of foreign language teaching, similar tests are conducted to demonstrate the same result that foreign language learners can only remember the first two or three meanings of a word.

The treatment of polysemy in cognitive linguistics can be characterized as involving:

- the adoption of a view of meaning as categorization, taken as family members having essentially similar features.
- the recognition of the importance of context for meaning and that linguistic and encyclopedic knowledge are very hard to keep separate, meaning is contextually dependent.
- the incorporation of prototype theory into linguistics.

Whatever the treatment is, anyone of the above can be vitally crucial for vocabulary in-depth acquisition.

To understand the phenomenon of polysemy better, people have to get familiar with lexicon property. As any linguistics textbook will tell us, the lexicon is where the properties of basic elements of language are stored, including syntactic or morphological properties, phonological properties, and semantic properties.

It appears that meanings are generated when a word is recognized in interaction with its context. This explains the inherent nature of polysemy phenomenon. The extended meanings are picked up with the passage of time, more exactly, with the use of the word in different context. Indeed, there seems to be no fixed number of meanings or senses of a word; new ones may be constructed as needed, and the number of senses is determined largely by the size of the dictionary. Psychologically, a word can trigger countless emotions in a person, comprising the innate meaning and affiliated meanings.

Long-term memory does not store the full meanings of a word, but rather stores a decontextualized record of experiences with a particular word.

It is safe to say that the meaning of a word is constructed in a person's encyclopedic brain, and the same word will mean differently for people. Meaning, in a way, is rich and forever varied: Every time a word is used in a new context, a different meaning will be constructed. While the difference

in meaning might only be slight at times, it will be significantly varied at others (as when a word is used figuratively). A word is a single unit of language which means something and can be spoken or written. Language, the system of communication in speech and writing, is used by people of a particular country or area

Any word can invoke a topic characterized by a relevant word. For instance, the topic of "printing" is characterized by words like printing, paper, press, type, process, ink, machine etc.; "restaurant" topic is characterized by words like building, specialty, dish, fork, knife, dinner table, waiter, order, etc. similarly the "Fig. 1" shows the what hens can/are/have ...

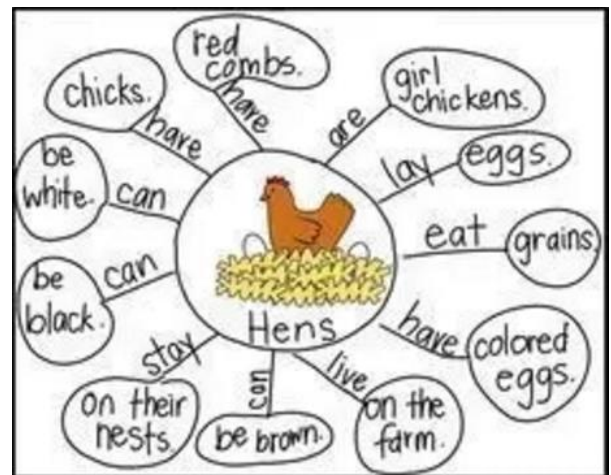


Fig. 1. Encyclopedic interpretation of the concept HENS.

^a <https://mp.weixin.qq.com/s/S2OSfUDHynVC58T7VQBshw>

Words are labels for concepts and teaching word meaning is essentially teaching concepts and relevant knowledge for given words.

As is noted in the previous paragraphs, the memorization of all the senses of a polysemous word is by no means easy, and learning by rote is inefficient. Thus exploring the meaning-forming-mechanism becomes necessary. To achieve this, the preliminary step is to identify the core sense and the extended senses of a polysemous word.

III. IDENTIFYING THE CORE SENSE

Core meaning sense or the basic sense, is the most concrete, frequent and literal of all the meanings of the word and therefore conceptually easier to understand. The core meaning is also central to the understanding of other meanings because the latter are often figurative (basically metaphorical and metonymic) extensions from the core meaning, the extended meanings can be predictable on the basis of the core sense. In the case of word "board", "a long thin piece of strong hard material, especially wood" is the core sense and the other meanings are metaphoric extensions, like "a group of people who have power to make decisions", "organization", "the meals that are provided when you stay in a hotel, guest house", "the stage in a theatre" etc. Apparently the extended senses are all relevant with the

"board", whether it is a meeting-board, or a dining-board, or used for other purposes.

Some notions to interpret the semantic network:

- bubble-map-like categories – categories with a central element that combines many high-cue validity attributes and motivates the existence of, and is conventionally related to, less central members
- family resemblance categories – categories in which not all members share the same set of attributes but in which members are disjunctively related in a chain-like (concatenation) fashion by sharing at least some attributes with each other; the usual example is Wittgenstein's game.

The Oxford English Dictionary defines "metaphor" as "the figure of speech in which a name or descriptive term is transferred to some object different from, but analogous to, that to which it is properly applicable." This statement may appear straightforward enough to stand as the undisputed definition of this key word "metaphor," but in reality it overlooks the existence of the intense discussion which has surrounded this topic in the last forty years.

The definition of metaphor could reflect three influential theories which have descended directly from Aristotle. First, metaphor operates at the level of the individual word, having nothing to do with human mode of thought. Second, this word is transferred to something else which assumes that the word has a proper use in literal discourse, but a deviant use in metaphor. Third, the two nominal elements of the metaphor are bound together by similarity.

Aristotle's identification of the word as the basic semantic unit launched metaphor on a trajectory which eventually relegated it to a trope or figure of speech which is nothing more than a matter of style. In the words of Soskice, "Aristotle tends to speak of metaphor as a phenomenon of the individual word rather than of any wider locus of meaning such as the sentence, and this is an important theoretical limitation." (Janet Martin Soskice 1985)

Similar to the proposal made by Glucksberg (2001, 2003) and his colleagues, it is natural to suppose that those encyclopedic properties of the lexical concept which are promoted to the status of content constitutive of the resulting ad hoc concept become and remain active during the metaphor interpretation process given their contextual relevance (Rubio 2005). Conversely, the activation of those logical properties that have been demoted in concept loosening may be suppressed during processing (Recanati 2004; Rubio 2005)

Although the models of metaphor interpretation discussed above share the view that metaphor comprehension involves enhancing relevant properties of the vehicle while suppressing irrelevant ones, their accounts are different in some fundamental respects. In particular, there are important differences between Recanati's and the relevance theoretic views of metaphor interpretation (for a discussion of the differences between the class-inclusion and

the Relevance Theory models of metaphor interpretation, (Rubio 2005)

According to the interaction theory, metaphor has six characteristics: (a) metaphor creates new meanings and new similarities; (b) metaphor cannot be reduced to a comparison or an analogy; (c) metaphor cannot be given a literal paraphrase without losing a part of its meaning; (d) components of a metaphor (the topic and the vehicle) mutually influence each other, EMERGENT FEATURES IN METAPHOR COMPREHENSION 119 which results in a change in their respective meanings; (e) metaphors use both similarities and differences existing in their components; and (f) metaphors imply a tension between the topic and the vehicle. (Marie-Dominique Gineste 2000)

In processing a metaphor, the representations of the topic and the vehicle, and their respective associated features, are juxtaposed. In this juxtaposition, a new representation emerges, and it is this new representation that manifests similarities. As Ricoeur explained, the metaphor is a semantic event that takes place at the point where several semantic fields intersect. It is because of this construction that all the words make sense. Then the metaphorical twist is at once an event and a meaning, an event that means or signifies, an emergent meaning created by language. (Ricoeur, 1975/1977)

IV. METONYMY

As a lot of studies have been done in regard to the cognitive function and its use in interpretation of polysemy, this paper will not further discuss it separately. Traditionally viewed, metonymy is a figure of speech in discourse used for rhetorical effect, a figure of speech in which one word or phrase is substituted for another with which it is closely associated. It is a stylistic language operation that makes use of the name of one thing for that of something else according to theory of substitution. For instance, in "There came a new face in our class." the word faces is the name used to refer to people in this particular context, a typical metonymic use of part-for-whole. In the sentence "He was not the man who let his heart rule his mind", heart refers to emotion, and mind refers to sense.

With the advent of cognitive linguistics, completely different assumptions were made about the nature of metonymy as well as metaphor (Gibbs, 1994; Lakoff, 1987; Lakoff & Johnson, 1980). The contention within cognitive linguistics is that there is nothing figurative about figures of speech as such.

According to Langacker (1999), metonymy is a reference point and an activation phenomenon in that "the entity that is normally designated by a metonymic expression serves as a reference point affording mental access to the desired target, i.e. the entity actually being referred to" (p.199).

It is widely agreed that metonymy is the substitution of one thing for that of another with which it is closely associated. Its function is to express an idea briefly and effectively by compressing much into a single word or a short noun phrase.

Papafragou (1996) has argued that the production or reception of metonyms need not depend on any previous actual association between its terms or their referents. Any concept can prompt any other concept. The only thing standing between a metonym and its interpretation is the relationship between the writer and reader. In a sense, this is right, and the displacement does not happen without reason. The combination of two items takes place according to either explicit or implicit connection between them.

The following examples are some of the mechanisms of metonymy.

Examples:

- *Container for content*: The film star has a large wardrobe.
- *Part for whole*: The lack of cohesion of the company accounted for the brain drain.
- *Instrument for profession*: He chose a gun instead of a cap and gown.
- *Object for people*: The crown should not yield to the cross.
- *People for people's work*: Only billionaires are able to collect Picasso.
- *Place for people*: The whole town attended the funeral.

V. METAPHOR VS. METONYMY

Metaphor and metonymy are the two most important tropes in rhetoric, poetics, and everyday language. Defining what they are is difficult and different definitions easily lead to contradictions, but metaphor and metonymy can be understood as special processes of meaning-making. As two important tools in cognitive linguistics, metaphor and metonymy are similar in various aspects but the major difference is that if a metaphor substitutes a concept with another, a metonymy selects a related term. So, if metaphor is for substitution, metonymy is for association.

Metonymy has received much less attention from cognitive linguists than metaphors, and in most cases it is still treated in a narrow traditional way as language ornamentation. However, it is metonymy that sometimes helps us to discover the detailed nature of how reason and the conceptual systems are embodied and how cultural models enter our cognitive system and construct the language. In many cases they underlie conceptual metaphors and are "genetically" related in their origin. In linguistic investigation they are the source to see cross-cultural differences and to construct language specific patterns, prototypes or cognitive models (Rūta Sirvydė 2007).

So metonymy is a figure of speech. It is used in rhetoric where a thing is not referred by its name but with the associated word based on the mutual salience and continuity. A metaphor is an expression. This expression shows the similarity and likeness between two items on some aspects. In metonymy, the association of the word is based on contiguity, and in a metaphor, the substitution is based on similarity between the target and the ground. If metaphor can be used to define the transference of relation between set of things to another, metonymy is used to define a word. Metonymy uses a single characteristic for the identification of a complex entity. And recent studies show that the working mechanism could be more complex, and distinction of metaphor and metonymy is ambiguous.

Another difference between metaphor and metonymy is that a metaphor acts by suppressing an idea while metonymy acts by combining ideas. But both metaphor and metonymy are used to express ideas which are greatly different from the original meaning. When a person uses a metonymy, the qualities are not transferred from the original word to the metonymy. It functions mainly as a tool of reference. About this, some other researchers hold opposite view, claiming that metonymy has equal cognitive function as metaphor. But in metaphor, when there is a comparison, the comparison is based on the qualities and some qualities are transferred from the original to the metaphor in the process.

So, it can be said that if metaphor is used for substitution and condensation, a metonymy is used for combination and displacement.

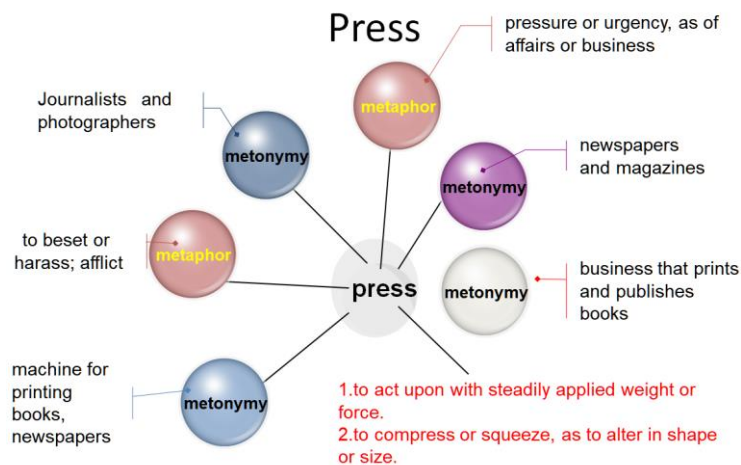


Fig. 2. Cognitive interpretation of the word "press".

In contrast to homonymous words, polysemous words ("Fig. 2") are considered to be semantically related and there is a semantic transfer, i.e. metaphor or metonymy between them. Thus semantic relatedness is an important factor for identifying polysemous words.

VI. CRITERIA TO KNOW A WORD

To know a word, the following criteria should be followed:

- Know the phonological properties
- Know the morphological relations and derivations
- Know the correct uses at the level of grammar
- Know the concept and the encyclopedic knowledge (denotation, connotation, and appropriateness)
- Know the core/basic sense
- Know the relationships among its senses
- Know the semantic associations between the word and other words (collocations, chunks, synonym, antonym, hypernym, hyponym etc.)

Vocabulary learning has always been a headache for second language learners, and words are the foundation of the language building, thus how to improve the efficiency of lexical acquisition remains to be further studied. To make clear to what a degree a learner can claim he knows a word, concrete criteria are put forward.

VII. CONCLUSION

For the purpose of vocabulary learning, this paper attempts to analyze in detail the two powerful tools of cognition and make a distinction between metaphor and metonymy. There is a meaningful difference between metaphor and metonymy, as two ways of construing new concepts from old concepts, one is based on similarity, while the other is based on contiguity. This paper also intends to explore an effective way of interpreting a polyseme by discovering the mechanism of sense extension or transfer, serving as a shortcut in lexical study. It has to be pointed out that the traditional way of vocabulary learning such as word-formation is still in wide use, and it will be so forever. And contextual word learning through extensive reading can well promote a natural and genuine acquisition. Further studies need to be done about the significance of functional analogy and spatial profiling for profound understanding of polysemy.

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