

A Cross-Linguistic Case Study of Chinese and English “Eye”: Cognitive Semantics as Approach

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Abstract: Cognitive semantics has gained increasing attention from linguists who are into polysemy and trying to figure out the relations of multiple senses possessed by a single word. Existing studies emphasise bodily experience's effects on language users' perception and conceptualisation of entities around them and consider body-part as the core of embodiment. However, there is limited research on systematic and detailed analysis of cross-linguistic similarities and differences that can provide insights into how language users with diverse culture backgrounds perceive a particular organ and create experiential similarities between the concrete body part and abstract concepts. This study takes the case of eye as the pointcut to investigate both the shared semantic meanings and discrepancies in Chinese and English. Dictionary and corpus are employed as two data sources for extracting linguistic instantiations of stabilised senses and contextual senses to address the problem in a comprehensive manner. The results suggest that prototypical sense acts as a bond to connect most extended senses in both languages and some cross-linguistic similarities exist in extension strategies, whereas discrepancies do occur with the intervention of culture. This research sheds light on some underlying mechanisms of cross-linguistic understanding and sense making process by virtue of exploring “eye” as a polysymy.

Keywords: eye, body-part, embodiment, polysemy, cross-linguistic, cognitive semantics

1. Introduction

Cognitive semantics reveals a tradition of rejecting objectivism and holds that meaning is based on the understanding of experience, which has been greatly applied to research on polysemy. Polysemy, in its widely acknowledged definition, refers to the form of ambiguity where more than two related senses are associated with the same word [1]. When drawing on research from cognitive semantics that focus largely on lexical semantics, the treatment of polysemy involves categorizing meanings/senses, recognizing the importance of context and encyclopedic knowledge for meanings/senses, and employing prototype theory, which need not to converge [1]. With further explanation, lexical items are linguistically coded representations of conceptual and mental categories. This process is realised as the polysemy makes sense to human with the intervention of contexts and peoples' encyclopedic real-world knowledge that not a single one can be omitted [1, 2]. Lakoff defined and operationalized the notion of prototype by explaining that a word's prototypical sense may be the most frequent and/or salient and/or most concrete one, the earliest examined one, the one

from which the other sense can be derived most rationally [3]. Upon these principles, the semantic values of a word are no longer single or unitary but a set of interrelated senses.

The relations between senses are motivated by language users' conceptualisation of entities in the real world and concrete physical and sensori-motor experiences [4]. This cognitive-semantic view can be explained from the embodied perspective that human do much of their thinking and reasoning in experientially derived structures [5]. Human body is perceived as the core of embodiment [6]. The previous research showed great interest in investigating human body parts and analysing how the language derived from human perception of those body parts reflects cultural values and mental faculties primarily. Yu compared the metonymic and metaphoric expressions contain terms that signify "eye" in Chinese and English, indicating that eye-related expressions have an experiential grounding in everyday sensori-motor experiences [7]. This study aims to establish upon the previous research on "eye," from the cross-linguistic perspective as well, and expand the data source by referring to dictionaries (primarily online) and corpus.

Dictionary with its clear definitions and descriptive practices of lexemes is useful reference of cognitive-semantic analysis [8]. In this study, *Shuo Wen Jie Zi* as the first Chinese dictionary that garners etymologies of Chinese character and Modern Chinese Dictionary online are referred to, while English senses of "eye" are collected from Cambridge dictionary. Corpus data as a source of evidence for distinct senses are utilised relatively recently [9]. This study is not corpus-based or computational-based quantitative research but only purposively selects targeted linguistic instantiations from corpus as a tool.

Furthermore, in contrast to earlier studies centered on the analysis of body parts through the lens of Conceptual Metaphor Theory, this research endeavors to broaden the scope of the theory by integrating it into the framework of Cognitive Semantics. The theory is applied by considering both the prototype and context of the target polysemy—eye, to delve into the similarities and differences of its semantic meanings as well as their relations that render this polysemy less arbitrary.

Section 2 analyses Chinese and English "eye" step-by-step with reference to dictionaries and corpora, respectively. Section 3 compares "eye" in Chinese and English from a cross-linguistic perspective. Lastly, Section 4 discusses the findings and makes a conclusion.

2. Cross-Linguistic Analysis of "Eye"

In this section, the semantically interrelated senses and pragmatic instantiations of "eye" in Chinese and English are presented and analysed, respectively by making reference to online dictionaries and corpora.

2.1. "Eye" in Chinese

Data source 1: analysis is implemented based on the senses listed in the dictionary from literal meaning to motivated extended meanings.

Shuo Wen Jie Zi as the first Chinese dictionary compiles the forms and origins of Chinese characters. According to its documentation, the original form of "Yan" on oracle bones looks like a person trying to turn his/her head and look back, therefore the character denotes the visual organ humans use to observe the world around, which constitutes the original sense of "Yan" in Chinese.

In Modern Chinese Dictionary, "Yan" possesses nigh senses:

- a. "Yan Jing": literally means "eyes" and "eyeballs".
- b. "Yan Li": literally means "eyesight," also metaphorically means "insight."
- c. "Yan Xian": literally means "sight line," also metaphorically means "spy."
- d. "Jian Zheng": means "witness."
- e. "Kong Dong": means "hole."

f. “Wang Zhuang Wu de Kong Xi”: means “any mesh’s interspace.”

g. “Shi Wu de Guan Jian”: means “key parts/points of the entities.”

h. “Wei Qi Yong Yu”: means “a term in playing chess,” “eyes” in chess game determine whether the relevant pieces can be alive.

i. “Jing de Liang Ci”: means “quantifier of wells.”

From the original sense to the abovementioned extended meanings, Chinese people project their understanding and perception of “eyes” on human body to perceive and describe other entities that are either experientially subjective or objective, based on their perceived similarities. This process is realised on people’s conceptualisation of “Yan” and other objects or phenomena. These nine senses can be categorised into two groups. The first involves the ones that are denotatively tangible to humans (sense a, c, e, f, h, i) and the second includes those denotatively intangible ones (sense b, d, g).

In the first category, sense a. employs a traditional metonymy THE PART FOR THE WHOLE. “Yan,” by tracing its etymology, emphasises the appearance of a specific organ from a flat portrait view without details on its structure. Therefore, “Yan” in this sense denotes both the flat and three-dimensional features of human-perceived “eye.” Sense c was generated by first, conceptualising and concretising the abstract “sight” which represents the basic function of “Yan” through ontological metaphorization to “sight line,” and second, mixing the characteristics of the source domain “sight line” and the target domain “people with particular profession” to form a conceptual domain of “spy” or one’s “informant.” This sense metaphorically refers to the person who works as an “eye” to observe and collect information for another person. Sense e., f., and i. can be analysed in the same way since they all borrow the certain visible features from the organ “Yan.” For example, Chinese people use “Du Qi Yan” for “belly button,” “Sang Zi Yan” for “throat,” and “Quan Yan” for the “mouth of spring” because they share the similar hole-shape with “eye.” Sense h. is usually named as “Qi Yan” for the space in the middle of four chess pieces, where the opponent cannot reach. The importance of “Qi Yan” in chess game aligns with that of “eyes” for human. Additionally, its shape looks like an “eye,” which constitutes the second experiential similarity between sense h and a real “eye.”

In the second category, sense b. originally means “eyesight” but is metaphorically extended to “insight” because Chinese people tend to link “eye” with “heart” and “mind.” Having good “eyesight” might be previously assumed as the prerequisite for being observant. If a person is praised of having good “Yan Li,” he/she might have shown the ability to make discerning judgements. The conceptual metaphor manifested here is KNOWING/UNDERSTANDING IS SEEING. Sense d. is motivated by the same metaphor as sense b. because a Chinese proverb says, “what one sees is real whereas what one hears may not.” “Eyes” are always considered as the most direct and closest channel for us to approach the “fact.” The emergence of sense g. might be attributed to people’s beliefs in the dominance of “eyes” for humans.

Data source 2: Chinese corpus is treated as the second data source for investigating the meaning of “eye” in context.

The second data source for this research is the BLCU Corpus Center (BCC) which serves as one of the most comprehensive and largest Chinese multi-domain corpora for linguistic studies [10]. The theoretical basis for categorization is Cognitive Semantic theory that considers our conceptual systems as largely metaphorical and built upon the peculiarities of our bodies and sensory-motor experiences [11]. Therefore, body parts are always taken as fundamental source domains where people can map to particular entities through the process that operates at the conceptualization level [12]. The pioneering work of Lakoff and Johnson lays the foundation of classification, orientational metaphors, ontological metaphors, and structural metaphors [13]. Metaphors belonging to the first category deal with spatial orientations and render abstract entities concrete based on our physical experiences of body move in different orientations, such as up-down, in-out, front-back, etc. The

relevant conceptual metaphors include “HAPPY IS UP; SAD IS DOWN.” The mechanism of ontological metaphors is primarily to grant intangible entities concrete and tangible features. For instance, the Container metaphors that treat the abstract “visual field” as a “container” that enables objects to “move in” or “move out of.” The last type of conceptual metaphors gives rise to the structure of abstract concepts by mapping a series of features from the source domain, motivated by experiential similarities [13]. The analysis of Chinese “Yan” is most frequently applied with the first two categories after scanning the linguistic instantiations in corpus.

Table 1: Linguistic instantiations from Chinese corpus.

Metaphor Category	Lexical Instantiation and literal meaning	Instance in use (literal translation)
EYE IS CONTAINER	“Yan Zhong (In the eye)”	1) “The spoon was thrust into her mom’s eye” (L)
		2) “I can’t see clearly what is inside your eyes” (M)
Space	“Yan Qian (In front of the eye)”	1) “The hotel is in front of your eyes.” (L)
		2) “Victory is in front of your eyes.” (M) (Victory is right here under your nose)
Time	“Yan Xia (below the eye)”	1) “The truth was revealed below peoples’ eyes” (L) (The truth was revealed to people)
		2) “Below the eyes, the best time for harvesting has come.” (M) (Now, the best moment for harvesting comes)

Interestingly, the term “Yan” in the sentence has versatile applications in both its literal and metaphorical sense. Taking the example of “Yan Zhong,” which literally refers to something physically present in the eyeball or reflected on the retina, the linguistically sampled instances demonstrate a prevailing use of the metaphorical context (marked as M) over its literal usage (marked as L). In its metaphorical sense, “Yan” becomes closely linked to one’s emotions and thoughts [7]. For instance, the phrase “I can’t see clearly what is in your eyes” actually conveys the idea “I can’t fathom what is in your mind,” subtly suggesting the complexity of a person’s inner world. Thus, when employed metaphorically, “Yan” serves as a vessel for emotions and thoughts in a manner akin to people’s perception of the concept of “mind.”

When used in the context of “Yan Qian,” which literally signifies that something is physically situated in front of a person, within their immediate view, the spatial domain covered by vision is metaphorically conceptualized as a three-dimensional framework, within which any entities can be actualized. For instance, the abstract concept of “victory,” which is inherently intangible and unseen, can be transformed into a tangible reality within this construct, making it attainable and almost palpable.

The final instance, “Yan Xia,” literally translates to “something situated under or below your eyes,” and metaphorically conveys the notion of “at this moment” or “now.” The metaphor arises from the association of what one’s eyes can perceive with the concept of the present moment. Consequently, anything, whether it’s visible or not, can be described as being “under the eye” as long as it is transpiring at this specific point in time.

2.2. “Eye” in English

Data source 1: Online Cambridge Dictionary serves as the first data source for meaning analysis.

In contrast to the Chinese “Yan,” which is predominantly used as a noun whether on its own or in combination with others, the English term “eye” displays a range of syntactic functions. However, this study will not primarily delve into these syntactic variations. The Cambridge dictionary outlines two principal roles for “eye” - one as a noun and the other as a verb. The table below lists the meanings of English “eye” (S marks “sense”):

Table 2: Linguistic instantiations from English corpus.

Syntactic function	Semantic meaning
Function as a verb	S1: To look at someone or something with interest
	S2: To look closely at someone or something
Function as a noun	S3: one of the two organs in your face that are used for seeing
	S4: the hole in a needle through which you put the thread
	S5: be the eyes and ears of sb/sth
	S6: a dark spot on a potato or similar plant part, from which a new stem and leaves will grow

The anatomical and literal sense of “eye” in English highlights the fundamental role of the specific organ (refer to S3). This term undergoes a semantic extension from its original denotation to its use as a verb. S1 provides a depiction of how individuals employ “eye,” spotlighting the personal, psychological, and emotional nuances intrinsic to this action, thus portraying “eye” as a container of emotions.

S2 introduces the phrase “look closely,” denoting the act of “observe or scrutinize.” This likely stems from associating the impact of “eyeing” something with the physical proximity between the eye and the object. This definition may evoke an imagery in our minds – that of a person bringing their eye closer to an object in order to discern finer details. This action is driven by the intention to closely observe and understand the nature of the object.

S4 illustrates the use of “the hole of a needle,” which shares a shape reminiscent of human eyes as perceived by language users. Thus, S4 can be viewed as a metaphorical extension from its literal meaning. In S5, the function of “eye” expands to refer to someone or something that acts as an “eye or ear” for an individual or organization, gathering information on their behalf. S6 demonstrates two layers of metaphorical extension. Initially, the emphasis on the “dark spot” draws a connection with the assembly of “iris, pupillary, and cornea,” while subsequently, “eye” symbolizes where “new stem and leaves will grow.” This resonates with the significance of “eye” in Western culture [14], as people transfer their comprehension of the physical eye to other entities that exhibit perceived similarities.

Data source 2: For the purpose of analysing English “eye” from contextual meanings, British National Corpus (BNC) is referred to as the data source.

As this study is comparative in nature, the analysis of the contextual use of the English term “eye” will be conducted within the same semantic domains as the Chinese term “Yan,” irrespective of its collocations such as “eyewitness,” “eyelash,” “eyeshadow,” and others. Following a review of the BNC, three representative instances of using “eye” metaphorically instead of literally can be identified, as presented below:

Table 3: Linguistic instantiations from English corpus.

Metaphor Category	Lexical Instantiation and literal meaning	Instance in use (literal translation)
EYE IS CONTAINER	“In one’s eye”	1) “I saw a little tear in her eyes” (L)
		2) “A gleam of humor appeared in her eye” (M)
PAYING ATTENTION IS SEEING	“Keep an eye on”	1) “We can’t keep an eye on them all the time.” (M)
UNDERSTANDING IS SEEING	“Turn a blind eye to”	1) “It is hard to turn a blind eye to something so obvious and widespread.” (M)

The phrase “in one’s eyes” can be understood both in a literal and metaphorical sense. The first sentence doesn’t adhere entirely to the “literal” interpretation, as “eye” there represents the entire anatomical structure of the eye, including the orbital area that generates and contains tears. In contrast, the second sentence regards the “eye” as a receptacle for storing emotions and sentiments, rendering it more in a “metaphorical” context when compared to the first sentence.

The phrase “keep an eye on” could theoretically be interpreted in a literal and somewhat grotesque manner as “physically attaching someone’s eye to something,” although this usage is not employed in practice. The literal interpretation highlights an ongoing action of “observing,” demanding the observer’s attention and leads to the subsequent metaphorical extension.

Lastly, the expression “turn a blind eye to” literally conveys the notion of someone using their blind eye to act as though they can perceive something. In its metaphorical extension, it signifies that an individual deliberately overlooks something they recognize is amiss and feigns ignorance. The primary metaphor behind is KNOWING/UNDERSTANDING IS SEEING. This interpretation also adheres to the Western culture’s centrality of eye in interacting with the world around.

2.3. Comparison Between Chinese and English “Eye”

Notably, upon analyzing the dictionary senses that are stabilised, it becomes evident that in both Chinese and English, the multiple senses share a common root related to the human body. These senses reflect human perception and understanding of their body, as well as any activities or entities in their cognition that bear some semblance to real eyes. Consequently, these meanings are metaphorically extended. Additionally, both Chinese and English exhibit three strategies in stabilising extended meanings, function-based, form-based, and perception-driven strategies. The eye primarily serves the purpose of seeing and observing. Senses such as “spy” and “eye or ear of sb/sth” are prompted by this strategy. Form-based strategy motivates senses of “hole,” “dark spot,” and “interspace of meshes.” And senses motivated by perception of experiential experiences involve mapping the cruciality of eye for human to the key parts of other entities or events.

There are differences between stabilised meanings of Chinese “Yan” and English “eye.” Chess game is conventional and culture-specific in China so that the sense generated is culture-specific. Moreover, “Yan” itself is equipped with the meaning of “insight” in Chinese, which is not the case in English; whereas in English, one stabilised meaning exists in regarding “eye” as container to reserve and showcase emotions like “interest” and “caution.”

Drawing insight from corpus instances, it reveals that the shared use of two languages appears in likening “eye” to “container” for emotion or as a channel to approach one’s real thoughts. In Chinese, the term “Yan” consistently pairs with locational nouns like “Zhong” (inside), “Qian” (in front of), and “Xia” (below). Within the corpus, the combined occurrences of these three phrases constitute 13% of all contextual sentences involving “Yan.” “Eye” in these cases is likely taken as an anchor for people to locate time, space, and the distance between them and other entities grounded in their faith in the reality perceived through sight. In English, the metaphorical incorporation of “eye” within context is typically realized through its integration into idiomatic expressions. However, the “eye” itself in these cases does not acquire any novel or expanded meanings.

3. Conclusions

The study discovers that both in Chinese and English, the prototypical sense of “eye” acts as the motivation and root that relates most senses together and makes them more structured. In addition, the experiential similarities are noticed in both languages when considering how senses metaphorically extend from the original one. The discoveries align with the intuitional theoretical framework that meaning is motivated and based on our experience, especially when it is sensorimotor [6]. It is also discovered that some culture-specific meanings emerging in the analysis of dictionary senses that are stabilised, which indicates that culture also plays a motivating role in meaning-formation. This finding corresponds with Yu’s research on “eye” that highlights the cultural effects in framing certain aspects of bodily experience that is salient for concretising people’s understanding of abstract concepts [7]. This study is special as it combines two types of data sources to gain more in-depth understanding of similarities and differences between Chinese and English meaning extensions of “eye.” Future research is recommended to concentrate on the form-meaning relations to further explore why a single Chinese character like “eye” can possess such diverse meanings and English “eye” displays more of its metaphoric senses in idiomatic expressions.

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