

# A Cognitive Semantics Examination of Semantic Shifts in the Word "Blue"

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## Abstract

The investigation of semantic shifts has garnered significant interest among linguists in recent years, particularly within the realm of cognitive linguistics. As human societies progress, the meanings of words often undergo transformations. Various classifications exist to categorize these semantic changes, and this study primarily focuses on three: extension, narrowing, and shifting of word meaning. The cognitive mechanisms underlying these semantic changes have become a prominent area of research. Cognitive Semantics aims to elucidate these mechanisms by examining the roles of prototype, metaphor, and metonymy in semantic change. In this paper, we explore the semantic evolution of the word "blue" through these three lenses to identify the motivations driving its transformations. Our objectives are threefold: (1) to identify the meanings of "blue" present in analyzed sentences; (2) to understand the processes through which the semantic changes of "blue" occur; and (3) to propose plausible explanations for the semantic shifts associated with "blue". It is posited that color reference or association represents the prototypical meaning of the word. The semantic changes of "blue" are primarily driven by metaphor and metonymy, with the former involving mappings between distinct cognitive domains, and the latter concerning mappings within a single domain. Building on these insights, we offer novel interpretations for semantic shifts observed in other words.

## Keywords

Cognitive Semantics; Polysemy; Semantic Shifts; Blue; Prototype; Metaphor; Metonymy.

## 1. Introduction

In 1880, the renowned German linguist Herman Paul proposed a classification of semantic changes from a diachronic perspective, which included enlargement, narrowing, shift, and emotional change of word meanings based on logical principles. From the 1930s to the 1960s, Paul's classification was further refined into "extension, narrowing, and shift of word meanings," which has been widely adopted by linguists to this day. Nonetheless, Chinese scholars have debated the suitability of this trichotomy in capturing the essence of word meaning evolution. Despite its limitations, this paper primarily concentrates on the extension, narrowing, and shift of word meanings.

Traditional vocabulary learning has relied on logic to account for semantic changes in words, with the enlargement of word meaning referring to the expansion of the scope of objects encompassed by existing words. In contrast, narrowing of word meaning involves reducing the range of objects encapsulated by words, which is also elucidated in terms of logic. As word meanings narrow, they come to denote only a subset of the instances to which they were previously applied. Traugott (2017) asserts the existence of narrowing in word meaning and posits that the development of word meaning is both positive and negative. Giulianelli, Tredici, and Fernández (2020) argue that generalization is a form of semantic change, which may be considered narrowing since it emphasizes fewer and more generic shifts in word meaning.

Silveira and Pruski (2015) categorize semantic change patterns into three types: mapping evolution, mapping adaptation, and mapping maintenance, with mapping adaptation closely resembling narrowing of word meaning. Wijaya and Yeniterzi (2011) contend that when a word meaning undergoes a significant transformation, entirely distinct from its original usage, it constitutes a shift in meaning, as the new meaning bears no relation to the original one. Hamilton, Leskovec, and Jurafsky (2016) discovered that reasonable shifts in word meanings predominantly occurred between the 1900s and the 1990s.

Although research on the expansion and contraction of word meanings has yielded some progress, the findings remain somewhat fragmented. However, some Chinese scholars have embarked on investigations into the systematic relationship between extension and narrowing of word meanings. For instance, Wang Li posits that the expansion of word meaning is more prevalent than its narrowing (Wang, 1980; Wang & Cen, 2007).

## 2. Theoretical Foundation

### 2.1. Prototype Theory

Cruse proposes that natural categories have a prototypic structure and believes that a rather wide range of topic areas have proved the prototype theory, such as psychology, anthropology, and aphasiology, etc. (Cruse, 2014). Prototype theory is developed based on the categorization of categories. It is believed that the membership of an instance in a category in terms of the respective properties of the instance and category (Hampton, 1995). He claims that there are three elements for prototype concepts: (1) prototype is a kind of category which takes a generalization or abstraction of some typical properties of instances falling in the same category; (2) prototype is a way of defining similarity; (3) prototype is a criterion for category membership, and instances that pass this criterion are members of the category while instances that fail it are not (Hampton, 1995).

The categorization of some similar instances or concepts is based on their closeness to a prototype. For example, when one person talks about a thing which is not in the situation, like a bird. The first image appears in the listener's mind might be a sparrow, for this kind of birds possess most properties that birds share, like having feathers, two legs, two wings, a beak, and being able to lay eggs, so sparrow can be regarded as the prototype of birds. Although penguins also belong to birds, people would not think of them when hear the word "bird. Penguins possess less properties of birds compared to other categories.

### 2.2. Metaphor and Metonymy

Metaphor was considered to be a kind of figure of speech. With the development of Cognitive Linguistics, linguists begin to view it as a way of thinking, a powerful cognitive tool for the conceptualization of the environment. It is believed that metaphor is a cognitive process in which mapping takes place between two different cognitive domains, the source domain and the target domain. In other words, metaphor is regarded as a process in which the target domain is mapping on the source domain. The cognition of human brain makes use of metaphors to understand and experience new objects or events. Frequently, the concepts of source domain are comparatively easy and less abstract, while those of target domain are difficult and more abstract, so that the understanding of latter requires to use the former. As what Lakoff and Johnson propose, people can conceptualize the less clearly delineated in terms of the more clearly delineated (Lakoff & Johnson, 2008).

Being same as metaphor, metonymy is also regarded as a way of thinking in cognitive linguists' view. Lakoff and Johnson regard metonymy from the perspective of cognitive linguistics as a process in which things can be perceived by virtue of their relations to something else. In other words, they view metonymy as a cognitive mapping taking place within a domain. Ungerer

figures out that “metonymy involves a relation of contiguity between what is denoted by the literal meaning of a word and its figurative counterpart and that one constituent of the metonymic link stands for the other.” (Ungerer, 2013).

### 3. Retrieval and Collection of Corpora

#### 3.1. Retrieval and collection of corpora

This paper uses the COCA, that is Corpus of Contemporary American English (<https://www.english-corpora.org/coca/>), which is the largest corpus in the world and contains 560 million words. It is evenly distributed in five registers: spoken language, novels, magazines, newspapers and academic articles, and is considered to be the most suitable English corpus for observing the current development and changes of American English, and it is also a treasure trove for English learners.

First, the expression “[blue]” is typed into the search frame, which means that all forms of “blue” are under the consideration. Second, in order to find out what forms of “blue” appear in sentences, attention must be paid on the “frequency” register. Third, “blue” is searched separately based on the part of speech. (1) search “[blue] ADJ”, and there are 1434 results; (2) search “[blue] NOUN, and there are 37278 results; (3) search “[blue] VERB”, and there are 1141 results.

The search finds that “blue” behaves in four different forms within sentences, including blue, blues, blued and blueing, in which “blue” appears most at a frequency of 111890, the other three forms appear respectively 15626, 32 and 5 times. From the four forms, it is clear that the word “blue” can be the adjective, noun and verb. Among the searching results, the most common meaning of “blue”, either behaving an adjective or a noun, is a kind of color. When it is a verb, its meaning is “to make something blue”. In the collected data, “blue” is found that it is contained in some slangs in which the word totally loses its original meaning.

##### 3.1.1. Blue as an adjective

(1) Seeing beautiful scenery with green mountains, and blue oceans your street will be cast away.

(2) I can discuss any of those topics until I’m blue in the face, but he didn’t even know some of the things. (discuss sth. until one is blue in the face: to argue, discuss etc about something a lot, but without achieving what one wants.)

(3) I have been feeling kind of blue. (depressed)

As an adjective, it possesses several meanings: 1) sad and without hope, depressed; 2) blue jokes are about sex, in a way that might offend some people; 3) discuss till you are blue in the face: to discuss about something a lot but without achieving what you want; 4) blue with cold: someone who is blue with cold looks extremely cold; 5) go blue: if someone goes blue, their skin becomes blue because they are cold or cannot breathe properly; 6) talk a blue streak: to talk very quickly without stopping; 7) once in a blue moon: very rarely; 8) scream blue murder: scream very loudly. In these meaning, the ways that “blue” to change its original meaning include narrowing, like meanings 3), 4), 5) and 7), shift, like meaning 1), and extension in meaning 2).

##### 3.1.2. Blue as a noun

(1) I get attacked out of the blue. (out of the blue: unexpected)

(2) The publisher approaches us out of the blue asking us if we’d do a game for an older audience. (out of the blue: unexpected)

(3) ... the top-most band of blue – equal to one half the width of the flag...

(4) ...three horizontal bands of blue (top), red (double width), ...

When "blue" is a noun, besides the meaning of color, it has other meanings: 1) the blues: a slow sad style of music that came from the southern US; 2) the blues: feelings of sadness; 3) out of the blue: if something happens out of the blue, it is very unexpected; 4) the blue: the sea or the sky. The meaning 1) belongs to the narrowing of semantic change, 2) is the shift of word meaning, and 3) is the word meaning extension. There are some sentences in which "blue" is composed with other words and becomes slangs which frequently do not deliver the meaning of color.

### 3.1.3. Blue as an verb

- (1) They saw the sky blueing up overhead, but they saw no dead at the edge of the camp.
- (2) My mother used Mrs. Stewarts blueing in her wash water. You need to dilute the bluing.
- (3) The dawn barely blueing the air and the static stopped.
- (4) Oh, God, he blued himself.
- (5) He left, walked out under a sky that had blued out while he shopped.

## 4. Application of Cognitive Semantic Mechanism on the Analysis of "Blue"

### 4.1. Polysemy resulting from metaphor and metonymy

The collected data reveals instances where the word "blue" is used metaphorically, leading to an extension of its meaning. In the sentence "I have been feeling kind of blue," a cognitive mapping occurs between two distinct domains: the color (source domain) and emotion (target domain). In English, "blue" also signifies sadness due to its association with Greek mythology. This meaning is a result of metaphorical extension in semantic change. The phrase "blue blood" represents noble blood, with the color domain serving as the source and lineage as the target domain. The expression "out of the blue" contains an orientational metaphor, with spatial orientation (in and out) and "blue" conceptualized as a container. The phrase "a bolt from the blue" shares this conceptualization. In the collected data, "blue" is used to represent concepts like faith, loyalty, devotion, peace, and justice. This process involves two cognitive domains: the source domain of color and the target domain of morality, symbolizing a relationship.

In the sentence "A lot of women get the blues after the baby is born," "blues" refers to feelings of sadness. The verb "get" concretizes these abstract emotions. The sentence "It did win me the blue ribbon at the Gourmet Country Cookoff" involves the source domain of color and the target domain of honor.

The COCA data includes sentences where "blue" is followed by a noun, creating a metonymic relationship. In the sentence "blue collar won him the election," "blue collar" symbolizes workers belonging to a particular social class, representing a "part for whole" relation. "Blueprint" denotes a document that refers to its literal content, exemplifying a "container for content" relation. "Blue chip" can be regarded as the larger products made from blue chips, illustrating a "material for product" relation. In the sentence "They have shown an increasing tendency to vote blue," "vote blue" means voting for the party represented by the color. In this case, "the blue" can be considered as the controlled party, and the party leader as the controller, establishing a "controlled for controller" metonymy.

### 4.2. Diachronic analysis of the word "blue"

Color words are ubiquitous across languages. Search results indicate that the most frequent meaning of "blue" is a color, suggesting its origin as a color symbol. In the West, "blue" is often linked to the sea and sky, representing seclusion and bleakness, because in 8th century BC Greek mythology, the god Zeus was said to make rain when he cried. Consequently, "blue" has since denoted feelings. Some customary expressions maintain the original meaning of "blue" while representing other concepts, such as blue collar, blueprint, blue baby, blue blood, and

blue book. These expressions, despite not representing a color, were created in association with "blue" and are widely used due to their closeness to the color. The expression "blue baby" was coined by medical experts to describe a baby born with slightly blue skin due to a heart problem. This phrase has a low frequency of 49 occurrences from 1990 to the present but appears in various registers, such as news reports, magazines, academic papers, fiction, and movie lines. Low frequency does not imply informality. Some slang expressions, like "a bolt from the blue" and "talk a blue streak," have lost their original meaning and are rarely seen in formal contexts, with comparatively low frequencies.

The analysis reveals that "blue" was initially used as an adjective to denote color in the early 20th century. It frequently appeared before nouns and in slang expressions during this period. In 1996, "blue" was used as a noun to represent the sky in the sentence "The sun came up and sped across the blue," appearing in a work of fiction. This suggests that using "blue" as a noun was informal. From that point, the usage of "blue" as a noun became more frequent, primarily in contexts describing a color or representing blue objects. In the late 1990s, "blue" began appearing as a noun in various registers, such as magazines, news reports, and academic papers. In 1990, "blue" was used as a verb and appeared once in a work of fiction. To date, it has been found 32 times in the form of "blued" and 5 times as "blueing," exhibiting a lower frequency compared to its usage as an adjective and noun. The usage of "blue" as a verb remains informal, as it is more prevalent in fiction, spoken language, and blogs. Using "blue" as a noun is more acceptable compared to its usage as a verb.

## 5. Conclusion

An examination of the collected corpus reveals that the word "blue" functions as an adjective, noun, and verb in various contexts. Initially, "blue" was created as an adjective to denote a specific color, which accounts for its early and frequent usage in this form. The noun and verb forms of "blue" first emerged in fictional novels, suggesting their informal origins. The noun usage of "blue" increased from the late 1990s and began appearing in formal texts, such as magazines, news reports, and academic papers, while its verb usage remained less common and informal.

A shared characteristic among the three parts of speech is the expression of color through the term "blue." Consequently, the prototypical meaning of "blue" is a color, with other meanings derived from the prototype and categorized based on their similarity. The adjective and noun forms of "blue" exhibit more diverse meanings than the verb form, implying that semantic changes occur more frequently in adjectives and nouns.

Hence, the evolution of a word can involve changes in meaning or part of speech. The prototypical meaning of "blue" is most pervasive and varied, particularly in its adjectival form. Over the years, the frequency and scope of expressions in which "blue" retains its color connotation have expanded. This pattern suggests that meanings closer to the prototype are likely to become formalized, while more peripheral meanings remain informal. One possible explanation is that contemporary language users favor concise and brief expressions, as certain expressions can be replaced by adverbs. Furthermore, the adjectival form is the prototypical usage of the word "blue," while the verb form is more marginal and rare in formal texts, such as academic papers. The verb form's marginality can be attributed to two factors: the availability of alternative English phrases to convey the action and the tendency for color to modify objects in human cognition, rather than function as an action.

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