

*The Routledge Handbook of Chinese Applied Linguistics*  
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## Chapter 9: Color Terms in Chinese

### Abstract

This chapter profiles the lexicalization patterns of seven color terms retrieved from the Sinica Corpus together with their metonymic and metaphoric extensions. The purposes are to test out whether the structural and semantic complexities exhibited by the color terms accord with their stages in Berlin & Kay's evolutionary hierarchy in that the earlier the color terms occur, the more complicated their lexicalization patterns and semantic extensions are. The findings support the hypothesis such that *white* and *black* are the richest in terms of their grammatical and semantic complexities, followed by *red*, *yellow*, *green*, *blue* and *cyan*, respectively. The analysis also indicates that the degrees of lexicalization correlate with semantic opaqueness.

### Introduction

Various approaches to the linguistic and psychological features of color terms have emerged ever since the basic color terms theory was proposed by Berlin & Kay (1969) and their colleagues (e.g., Kay & McDaniel 1978). Their main claims are that human beings all share the same neurophysiological perception of the color spectrum and that languages contain basic lexical items to represent colors, although the colors themselves may be described in different ways. According to their investigation, there are 11 basic color terms that form a hierarchy in a fixed order—white/black, red, green/yellow, blue, brown, and purple/pink/orange/gray. The basic color terms hierarchy indicates various stages in the emergence of color terms in different languages. The conclusion drawn from these studies supports the universal nature of color naming systems. However, this universal perspective has been challenged by other studies that claim that color usages are contingent upon our environmental and cultural experiences (Wierzbicka 1990, 1996; Goddard 1998). They suggest that human beings associate their visual categories with fire, the sun, vegetation, or the sky, objects that are easily accessible in their surroundings. It is hence quite natural that light and dark colors are connected with day and night. This perspective seems to support the hypothesis of linguistic relativity. While the debate continues regarding these two opposing views, other studies have approached the nature of color terms from different angles such as that of psychological

experiment (Gao & Sutrop 2014), that of semantic and pragmatic investigation (Siegfried 1992; Xing 2009; Lai & Lü 2013). Some of their conclusions support the basic color terms hierarchy, while others uncover the semantic extension patterns exhibited by various color terms.

Indeed, color terms exhibit interesting ranges of linguistic manifestations as used in different collocations or idiomatic expressions. In addition, some color terms are used to express abstract meanings that have nothing to do with color. Color polysemy emerges when a color term is used to represent meanings from different domains. The syntactic and semantic behaviors exhibited by color terms in their usages are even more intriguing as different lexicalization patterns are observed regarding different combinations of color terms and their collocates. This chapter aims to provide an overview of the syntactic and semantic distributions of the color terms in Chinese based on corpora data. According to Berlin & Kay's hierarchy, Chinese is at the stage with six basic color terms including *bái* 'white', *hēi* 'black', *hóng* 'red', *lǜ* 'green', *huáng* 'yellow', and *lán* 'blue'. In addition to the six color terms, *qīng* 'cyan' will also be analyzed simply as a comparison and contrast. Because *qīng* 'cyan' can refer to green, blue or black, depending on what object it modifies. It would be very interesting to see how *qīng* 'cyan' is used in the corpus. In what follows, section 2 provides an overview of previous studies of color terms in Chinese; section 3 introduces the method including the analytic framework and the data; section 4 presents the results and; and section 5 provides discussions and concludes the chapter.

### **Previous Studies of Color Terms in Chinese: An Overview**

Previous studies of Chinese color terms utilize one of the following approaches: diachronic analysis of their origins, semantic analysis of their extension of the meaning of the color word, and experimental analysis of participants' perception of colors. The main studies will be summarized as follows.

From a diachronic perspective, Cheng (1991, 2002), investigated the origin of Chinese basic color terms and proposed a chronological profile for the development of color terms based on their usages in the Chinese historical periods. Her findings support the universal hierarchy proposed by Berlin and Kay. In the same manner, Wu (2011), using Chinese literary works as the material, examined the evolution of Chinese basic color terms over the past 4000 years. Based on word frequency, he then divided the development of Chinese color terms into five historical phases and eight periods.

Quite a few studies have focused on the semantic extensions of color terms (cf. Li & Bai 2013; Liu 2001; Lin 2009; Wu 2007; Xing 2009). Based on a comparison of Mandarin *hēi* 'black' and *bái* 'white' to English *black* and *white* from corpora, Li and Bai (2013) maintain that the concept of blackness is more or less the same in the two languages, but that of whiteness shows more negative uses in Mandarin than in English. Several studies (Liu 2001; Lin 2009; Wu 2007; Xing 2009) have explored the cognitive mechanisms of the semantic extensions of Chinese color terms. Xiang (2009), which investigated the semantic behaviors of seven Chinese color terms and compared them with their English counterparts, is the most extensive. She found that Chinese color terms share more similarities than differences when compared with their English counterparts with respect to extended meanings. Using both diachronic and synchronic evidence, this study showed that both Chinese and English color terms have employed the same mechanisms such as metaphor, metonymy, and pragmatic inference in the development of various extended meanings and also of more abstract meanings. The semantic domains and cognitive functions developed earlier in the history of each language have resulted in the differences in the extended meanings of Chinese and English color terms. The study also showed that the semantic extension of color terms observes a non-linear development: a literal meaning can, at the same time, develop into several extended meanings, which in turn can, also, at the same time, develop into several more abstract meanings.

Some studies have focused on the use of psychological experiments to test the basic color terms theory. For instance, Gao and Sutrop (2014) applied the theory of the evolution of basic color terms by Berlin and Kay to Mandarin Chinese. Employing fieldwork methods, color list and color-naming tasks, they ran an experiment to place nine color terms in Mandarin in terms of their order by cognitive salience. According to their results, the nine basic color terms in Mandarin are ranked according to cognitive salience as follows: *hóng* 'red', *huáng* 'yellow', *lǜ* 'green', *lán* 'blue', *hēi* 'black', *bái* 'white', *zǐ* 'purple', *fěi* 'pink', and *huī* 'gray'. They also claim that Mandarin is at the Stage of seven basic color vocabulary language, and that the emergence stages of basic color categories in Mandarin accord with the universal viewpoint advocated by the theory.

The extant literature has advanced our knowledge of color terms from different angles by a significant amount. Utilizing quantitative analysis of the data in the Sinica Corpus, this study carries out a survey of seven color terms regarding their lexicalization patterns in contingent with their meaning extensions. The hypothesis is that, the earlier in the evolutionary stages the color terms appear, the more complex their lexicalization patterns and semantic

extensions are. Accordingly, the syntactic and semantic complexity of the seven color terms are expected to explicate a descending order from *bái* 'white' and *hēi* 'black', followed by *hóng* 'red', *huáng* 'yellow', *lǜ* 'green', *lán* 'blue' all the way down to *qīng* 'cyan'.

## Method

To lay the groundwork for analysis, section 3.1 presents the analytical framework encompassing the concepts of lexicalization, metaphorization and metonymization. Section 3.2 then introduces the data sources and the methodological procedure for analysis.

### *The analytic framework*

The concept of lexicalization is crucial in Chinese as it explicates the complex relationship between a word and its constituents. According to Briton and Traugott (2005), it refers to a word formation process in which a new lexical item is produced with its structural and semantic properties not completely derivable from the components of the pattern of the formation of the word. The output of such a process forms a gradient on a continuum of three levels of lexicality, ranging from fixed or idiomatic phrases (L1), to compounds and derived forms (L2), to lexical simplexes and idiosyncratic fossilized forms (L3) (Briton and Traugott 2005). The degree of lexicalization within a word increases along with the loss of the characteristics of its grammatical and semantic components. In other words, the structure and transparency of the meaning of a lexicalized word depends on the degree of adhesion in its composing elements. If a word is more lexicalized, its structure and meaning become more opaque, and are not transparently derivable from the parts which compose it. If a word is less lexicalized, its structure and meaning are somewhat compositional, although some degree of idiomaticization is observed. For example, *nuts-and-bolts* in English and *zuǒyòu* [left-right] 'to influence' in Mandarin Chinese illustrate a strongly lexicalized word, whereas *black market* in English and *zhǔbǐ* [primary-pen] 'editor-in-chief' in Mandarin Chinese are less strongly lexicalized with their structure and meanings being compositionally derivable.

Briton and Traugott (2005) indicate that lexicalization is a gradual change with overlapping intermediate steps, leading to possible ambiguity, with an extended meaning co-existing with the original meaning until the extended meaning becomes an independent meaning of its own. In addition, Traugott and Dasher (2002) point out that two mechanisms are often recognized for semantic change—metaphorization and metonymization. Semantic change motivated by

metaphoricalization is considered as an analogical conceptualization of a more abstract expression in a target domain in terms of a more concrete expression in the source domain. Semantic change motivated by metonymization is considered as the semanticization of an invited inference due to contiguous and associative usage. As has been suggested, the meaning of a word changes along with the process of lexicalization. A correlation can be suggested according to which semantic mechanism is involved in the process of lexicalization. Metonymization is involved in less lexicalized cases whose meanings, although idiomaticized, are still compositionally derivable. And metaphorization is involved in more lexicalized cases whose meanings are more opaque and unpredictable with respect to the parts which compose it.

### *The data*

The data are from the Academia Sinica Balanced Corpus of Mandarin Chinese established by Academia Sinica in Taiwan (Sinica Corpus in short) by Huang et al. (1995) with 11,245,330 words. Proper names are not included. The seven targeted terms are retrieved and analyzed. The methods used in Lai & Chung (to appear) are adopted here and are repeated below.

Each of these expressions is categorized according to the following category, if such a category applies.

- (a) Number of characters: The numbers of characters are recorded. Sometimes an expression could be a proverb.
- (b) Grammatical functions: The role of the color term as attributive/predicative adjective, noun, or verb is annotated.
- (c) Constructions: The construction in which the part-of-speech of the color term appears is coded.
- (d) Meanings: Four types of meanings are coded: 'Literal' for instances in which black and white denote color meanings. 'Extension' stands for two types: 'compositional' refers to instances in which the meaning of the whole chunk is compositional with the color term being metonymically associated with the meaning of the other component; and the other is metaphoric extension with the color term denoting an opaque meaning derived metaphorically. Instances of metaphoric extension are further analyzed according to different senses in meaning. 'No color meaning' refers to those cases in which no color meanings are associated with the color term.

The above annotations were made on a number of excel files for each set of the data.



## Results

The results are reported in several tables. In total 2027 tokens were analyzed—318 for *hēi* ‘black’, 548 for *bái* ‘white’, 403 for *hóng* ‘red’, 269 for *huáng* ‘yellow’, 155 for *lǜ* ‘green’, 104 for *lán* ‘blue’, and 230 for *qīng* ‘cyan’. Table 9.1 gives the distribution of the number of characters found. Two-character disyllabic compounding expressions and three-character chunks are the most commonly found across color terms; four or five-character words are also found, and fixed proverbs, although not common, are also found in the data. Regarding the grammatical functions given in Table 9.2, the attributive function is the most dominant across the seven color terms. Correspondingly, when each of the color terms occurs in a construction, the modifier + noun construction is the most dominant one as shown in Table 9.3. The percentage gets even higher if the category of missing noun is added in. This category includes reduplicative forms of the color term such as *hēiqīqī* [black-qi-qi] ‘very dark’ that also functions as a modifier for a nominal expression. Table 9.3 also shows that the first two color terms *hēi* ‘black’ and *bái* ‘white’ show more varieties than the rest of the five color terms in terms of the possible combinations of constructions. For instance, only *bái* ‘white’ is found as an adverb to modify a verb as in *báixiánzhe* ‘doing nothing without reasons’. Among the seven, *hēi* ‘black’, *bái* ‘white’, *hóng* ‘red’, *huáng* ‘yellow’ are used in proverbial expressions, but *lǜ* ‘green’, *lán* ‘blue’, and *qīng* ‘cyan’ are not, showing that the latter three color terms are less metaphorically extended in contrast to the former four.

<TABLE 9.1 HERE>

<TABLE 9.2 HERE>

<TABLE 9.3 HERE>

The distribution of the meanings of the seven color terms is given in Table 9.4. The most dominant distribution of meaning across all color terms is to denote literal color meanings—for *hēi* ‘black’, 85.53%; for *bái* ‘white’, 72.81%; for *hóng* ‘red’, 81.39%; for *huáng* ‘yellow’, 86.62%; for *lǜ* ‘green’, 96.77%; for *lán* ‘blue’, 89.42%; and for *qīng* ‘cyan’, 77.39%. The occurrence of compositional extension due to metonymy is relatively low in terms of percentage; *hóng* ‘red’ and *lán* ‘blue’ show relatively higher percentages of occurrence among the seven colors. The cases for *hóng* ‘red’ mainly come from three sources. One is the red faces of women to represent females as in *hóngyán* [red-face] ‘females’. Another

is the association of the red flag of the communist party as in *hóngjūn* [red-army] ‘the army of the communist party’. The other is the name of the book *hónglómèng* ‘*The Dream of the Red Chamber*’ as in *hóngxuéjiā* [red-study-scholar] ‘scholars of *The Dream of the Red Chamber*’. The cases for *lán* ‘blue’ are as in *lánpíshū* [blue-cover-book] ‘an official governmental report’. As for metaphoric extension, all of the colors except for *lán* ‘blue’ show relatively higher percentages of occurrence compared to their metonymic extension. Details of the metaphoric extension associated with all of the usages will be given below from Table 9.5.1 to Table 9.5.5. The overall distribution of meanings is given below in Table 9.4.

<TABLE 9.4 HERE>

The distribution of metaphoric extension in *hēi* ‘black’ is indicated in Table 9.5.1 below. In total, 35 types of expressions are found. Almost all of the metaphoric associations with *hēi* ‘black’ carry negative connotations except for the expression *hēimǎ* [black-horse] ‘black horse’, which indicates an animate entity is unexpectedly excellent or profoundly remarkable. Four negative meanings stand out in particular. The extension to portray something that is illegal or done underground as in *cháhēi* [check-black] ‘investigate underground activities’ is the most commonly found usage. A similar dimension of the extension is to describe someone or something as evil or vicious as in *hēixīngān* [black-heart-liver] ‘evil’. Then, to indicate something done in a secret or mysterious manner is also common, as in *hēihù* [black-household] ‘unregistered household’. A further kind of extension is to depict something as being disgraceful or dishonorable, as in *mǒhēi* [spear-black] ‘to discredit’. Other negative extended meanings include depressing/frustrating/gloomy as in *hēiànmàn* [black-side] ‘the depressing periods’, sluggish/unprosperous as in *liánsānhēi* [continue-three-black] ‘continuously low for three (items or periods)’, and sarcastic/cynical as in *hēisèyōumò* [black-humor] ‘black humor’.

<TABLE 9.5.1 HERE>

Table 9.5.2 indicates the metaphoric extension of *bái* ‘white’. In total, 94 types of expressions were found. As shown in the table, meaning extensions associated with *bái* ‘white’ can carry either positive or negative connotations. In terms of positive meanings, the most common extension is to represent something clear or transparent as in *pǒubái* [divide-white] ‘to explain oneself

clearly'. To describe plain speech that is clear and comprehensible is also quite common as in *báihuà* [white-speech] 'ordinary speech'. In contrast to the illegal or underground meaning extension associated with *hēi* 'black', a moral, unimpeachable or innocent meaning extension is associated with *bái* 'white' as in *báidào* [white-road] 'legitimate; righteous way'. On the other hand, the most common negative extension of *bái* 'white' is to describe something or some action that is done in vain or without results as in *báilái* [white-come] 'to come in vain'. Further, since whiteness can also be associated with blankness, the extension to emptiness or nothingness is also common as in *píngbáiwúgù* [flat-white-no-reason] 'without any reasons'. Another extension is to denote getting something for free or without paying as in *báichī* [white-eat] 'to get something for free'.

<TABLE 9.5.2 HERE>

Table 9.5.3 shows the metaphoric extension of *hóng* 'red'. The most common extension is to positively portray someone or something becoming famous as in *zǒuhóng* [walk-red] 'to become famous', being profitable as in *shōuhóng* [receive-red] 'something profitable' or becoming better as in *zhuǎnhóng* [turn-red] 'becoming better'. Some negative extensions include depicting someone being jealous as in *hóngzháoyǎn* [red-ASP-eye] 'jealous', or being shy as in *hóngzheliǎn* [red-ASP-face] 'shy'. Two interesting usages are *hóngchén* [red-dust], which indicates the world of mortals and *sǎohóng* [sweep-red], which indicates to get rid of illegal bribery.

<TABLE 9.5.3 HERE>

Table 9.5.4 shows the metaphoric extension of *huáng* 'yellow'. The seven types of expressions all express negative connotations as in *sǎohuáng* [sweep-yellow] 'get rid of pornography', *huángniú* [yellow-cow] 'ticket scalper', and *huángqiāng* [yellow-tone] 'vulgar humor'. Table 9.5.5 gives the metaphoric extensions of *lǜ* 'green', *lán* 'blue', and *qīng* 'cyan'. Both *lǜ* 'green' and *lán* 'blue' are used to refer to people who are associated with the two main political parties in Taiwan: *fànlǜ* [pan-green] 'people supporting the DPP', and *fànlán* [pan-blue] 'people supporting the KMT'. One proverb is found for *lán* 'blue' as in *bìlùlánlǚ* [cart-ragged clothes], whereby blue is used to depict ragged or tattered clothes. As a comparison, *qīng* 'cyan' exhibits interesting extensions. While representing a color black or in-between green and blue, *qīng* 'cyan' extends its meaning mostly

from green, as in *qīngnián* [cyan-year] ‘youth’ or *shàngqīng* [most-cyan] ‘most fresh’.

<TABLE 9.5.4 HERE>

<TABLE 9.5.5 HERE>

## Discussions

The results support the basic color terms hierarchy in that the two color terms *black* and *white* initially occur at Stage I show the widest array of exhibition both structurally and semantically, followed by *red*, *yellow*, *blue/green* and *cyan*, which occur in the later stages. From the results of the data, all seven of the color terms occur mostly in a modifier + noun construction in which they function attributively to modify the following noun. Correspondingly, the prototypical literal meaning that designates a perceptible hue is also the most dominant one. Their grammatical and modifying functions gradually lose their independence when used in a number of collocations or idiomatic expressions with different degrees of lexicalization, reaching L1 or L2 in the sense of Brinton and Traugott (2005). The composites manifest different degrees of opaqueness in meaning carrying metonymic and metaphoric meanings together with their collocating components. For compositional cases, parts of the meanings associated with the color terms are metonymically highlighted. Take *hēishǒu* [black-hand] ‘a mechanic’ as an example. The meaning of the expression is compositionally derived from two components, the combination of the literal meaning of *hēi* ‘black’ and the salient body part, the hand. The composite form can be categorized as L2 and becomes conventionalized to refer to an occupation. Another example is *hóngyán* [red-face] ‘females’ that highlights the most salient body part of a woman to represent the whole person. The example *lánlǐng* [blue-collar] ‘blue-collar workers’ highlights a part of the clothes that workers wear while they are working. Likewise, *báiyǎn* [white-eye] ‘showing scorn’ denotes a cold stare or a scornful look, and the lexicalized compound indicates the indifferent and arrogant attitude in the cold stare of a person.

As to metaphoric extension, compared to the other six color terms, *bái* ‘white’ enjoys the most widespread number of meaning extensions with either positive or negative connotations. Most expressions with *bái* ‘white’ conceptualize the visual color white into various abstract attributes. Positive connotations encompass clearness or transparency as illustrated by *pǒubái* [divide-white] ‘to make things clear’, morality and innocence as in *qīngbái*

[clear-white] ‘moral, innocent’ and of legal status as in *báidào* [white-road] ‘legal organizations’. On the other hand, since the color white is without any hues, the use of *bái* ‘white’ can extend to meanings such as plainness and ordinariness. Examples such as *báihuà* [white-speech] ‘plain speech’ can illustrate. In addition, due to its lack of hues, *bái* ‘white’ can also signal emptiness or an action performed in vain as in *báilái* [white-come] ‘come in vain’. Unlike *bái* ‘white’, *hēi* ‘black’ extends to mostly negative meaning domains except for the case of *hēimǎ* [black-horse], which indicates a person being unexpectedly excellent. The negative meanings encompass attributes such as being evil, vicious, illegal, disgraceful, or gloomy. Examples such as *hēixīn* [black-heart] ‘evil, vicious’, *mǒhēi* [smear-black] ‘smear people’s reputation’, and *hēiànmàn* [black-dark-face] ‘the disgraceful side’ can illustrate. Other than *bái* ‘white’ and *hēi* ‘black’, the other five color terms show much fewer yet quite consistent patterns in meaning extension. For *huáng* ‘yellow’, negative meanings associated with pornography or vulgarity/obscenity are observed as in *sǎohuáng* [sweep-yellow] ‘to get rid of pornographic businesses’, or *huángqiāng* [yellow-tone] ‘obscene language’. Another extension is to denote an illegal ticket scalper as in *huángniú* [yellow-cow] ‘illegal ticket scalpers’. On the contrary, *hóng* ‘red’ mostly extends to positive meanings such as becoming famous or better, as in *zǒuhóng* [walk-red] ‘become famous’. Two interesting contrasts are *hóngzháyǎn* [red-ASP-eye] ‘jealous’, in which the description of the eyes as red denotes jealousy, while *hóngzheliǎn* [red-ASDP-face], in which the description of the face as red denotes shyness. Still another interesting case is *sǎohóng* [sweep-red], which is a metonymy-based metaphor. Red envelopes are used for presenting money to others on various different social occasions, usually celebratory, such as in the case of weddings, and this case is found in a context denoting an investigation into the bribery of doctors which included them being given red envelopes with money in them. Further, the contrast of *lǜ* ‘green’ and *lán* ‘blue’ are also culturally bound in Taiwan. Only two cases are observed: *fànǜ* [pan-green] and *fànlán* [pan-blue], which refer to people who support the two biggest political parties in Taiwan, the Democratic Progressive Party (DPP) and the Kuomintang (KMT), respectively. Finally, as a comparison, the color term *qīng* ‘cyan’ is analyzed. This color can presumably denote green as in *qīngzhúsī* [cyan-bamboo-silk] ‘Chinese green tree viper’, blue as in *qīngtiān* [cyan-sky] ‘blue sky’, or black as in *qīngsī* [cyan-silk] ‘black hair’. However, only extensions from green are found. The case *qīngnián* [cyan-age] ‘youth’ indicates youth, and the case *shàngqīng* [top-cyan] ‘very fresh’ denotes freshness. Both of the extended meanings are more closely associated with the color term green, as fresh plants

are often green.

### **Concluding Remarks**

In sum, according to Berlin and Kay's (1969) evolutionary sequence of basic color terms, Chinese falls at the stage of six basic color terms. Taking a data-driven perspective, this study profiles the grammatical and semantic distributions of seven color terms-- *hēi* 'black', *bái* 'white', *hóng* 'red', *huáng* 'yellow', *lǜ* 'green', *lán* 'blue', and *qīng* 'cyan' to examine whether their linguistic and semantic natures also reflect their different stages in the hierarchy. The investigation supports the hypothesis that the more earlier the color terms are in the hierarchy, the more complex their syntactic and semantic patterns are. The data also shows that the degree of the opacity in their meaning correlates with the degree of lexicalization. Their prototypical meanings are the most dominant, serving attributive grammatical functions. Some usages are metonymically triggered, contributing compositional meaning to the expressions. For metaphoric extensions, expressions containing *bái* 'white' top the others in having the widest array of extensions, followed by *hēi* 'black', *hóng* 'red', *huáng* 'yellow', *lǜ* 'green', *lán* 'blue', and *qīng* 'cyan'. Since lightness and darkness are commonly associated with people's surroundings, it is reasonable for them to use *hēi* 'black', *bái* 'white' for delineating other entities, their easier accessibility in turn leading to denote more abstract concepts. Except for *bái* 'white', which can have both positive and negative connotations due to our conceptions associated with the color white, an overview of all of the other color terms shows that it is quite straightforward to determine whether the extensions are positive or negative. For *hēi* 'black', only negative extensions are found because of the association of darkness with it. For *hóng* 'red', positive extensions are found due to the beamish image associated with the color red. Some cases also show that meaning extensions associated with color expressions are embedded in a cultural context. For instance, the associations of *lǜ* 'green' and *lán* 'blue' with different political parties are unique to Taiwan. These examples bring up an issue that is worth pursuing in the future—how cultural and contextual factors can play a role in shaping the usages of various color terms. Corpora from different regions will be needed to carry out extensive research in this endeavor.

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