A Diachronic Study on the Fine Categorization of Chinese Synonymous Category Classifier Constructions

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Abstract: Based on multiple corpora, this study combines qualitative research and quantitative research and takes the category classifier of ancient Chinese as the research object, with the aim to investigate the cognitive mechanism of fine categorization thinking and embodiment reflected by the Chinese nationality in the process of its construction. The results show that: 1) Metonymy plays a leading role in the formation of "X Zhong/Lei N" category classfier construction and is responsible for "concrete relevance" while metaphor plays a leading role in the evolution of its construction and is responsible for "abstract analogy". 2) The mechanism of constructions extension is not limited to the four types proposed by Goldberg: metaphor, polysemy, exemplification and subcategorization, but also involves metonymy in the extension of Chinese synonymous category classifier constructions.

Keywords: synonymous category classifier; construction; categorization; diachronic study

1. Introduction

Classifer serves as an important means for Chinese users to quantify things or mark attributes. It is very common for Chinese users to quantify things more precisely or mark their attributes by means of synonymous classifiers, which is an important reflection of the refinement of the external world category and the refinement of language users' thinking. Among them, the use of category classifiers "zhong/种" and "lei/类" is similar, but the similarities and differences coexist, which reflects the characteristics of fine categorization in the concept of Chinese language.

Based on the principle of "reality-cognition-language", cognitive linguistics not only supports the basic approach of studying language from the perspective of mind, but also emphasizes that language is inseparable from the interactive experience of human beings and the real world. It reflects the "humanism" and "materialism" in language studies, as a model of the localization of cognitive linguistics. In recent years, many scholars have carried out researches on this issue and achieved fruitful results (Wei Zaijiang 2019; Niu Baoyi 2021; Wang Yin, 2021 et al.), but related studies have not yet covered the topic of constructionalization. At the same time, with the birth and development of construction grammar theory at the end of the 20th century, relevant researches have been deepened and connotations of construction have been gradually enriched while the scope of research objects has not been expanded correspondingly, and the status of constructions of some objects has not been established as it should be, including Chinese classifier constructions (Goldberg, 2003). According to CNKI and Springer, in the past 20 years, there have been less than 20 studies on Chinese classifiers from the perspective of construction at home and abroad, and none of the studies on the embodiment of Chinese quantifiers in constructionalization has been conducted so far. In view of this, this study will try to investigate the fine cognition and cognitive characteristics reflected in the formation and evolution of Chinese category classifier "zhong" and "lei" from the perspective of constructionalization.

2. Chinese classifier construction

Before investigating the constructionalization of Chinese synonymous category classifiers, it is necessary to consider the following questions: What are the basic functions of classifiers? Why did not classifier appear in Chinese in the very beginning at first? There are two main explanations in the

academic circle: functional one and grammatical one. Functional school emphasizes the information marking function of classifier, which reflects the difference between nouns and other nouns by adding additional information from the outside of nouns. The grammar school emphasizes the quantified marking features of classifier and explains the function and necessity of classifier from the inside of nouns. Then, which of these two explanations can more accurately reflect the nature of Chinese classifiers? There is still controversy in academic circles (Pyraube 1998).

Pyraube pointed out that the main function of Chinese classifiers was quantification before the Middle Ages, and then began to appear the functions of classification and standardization. This study basically agrees with this view, and further believes that quantifying collocation objects is the basic function of Chinese classifiers, and also the most important function of Chinese classifiers in their birth. However, with the continuous development of Chinese speech classes and quantifier system, quantifiers' function of quantifying nouns is gradually weakened. For example, with the development of Chinese part of speech, some nouns can be quantified by adding suffixes (such as "renmen"), adjectives (such as "henduoren"), and even light use (such as "ren"), which shows that classifiers are not the only medium for quantifying nouns. At the same time, with the continuous improvement of the classifiers system, classifiers continue to differentiate, classification and marking functions become more and more obvious and refined, and began to appear more and more synonyms. For example, in "a pair/pair/pair of gloves" and "a group/row/row of people", "a pair" and "a group" are exactly the same classifiers concept as the other classifiers in their groups. Obviously, their differences are not reflected in quantitative characteristics, but in other marking functions. In this study, the grammatical function of quantifying nouns is the basic and early main function of classifiers, while the function of classifying and marking nouns is the differentiating function of different classifiers and the function of quantifying nouns is as important as quantifying nouns in later development. Quantization is the basis of classification mark, and classification mark is the further refinement of quantization. This is consistent with the objective needs of language expansion, and the transformation from single quantitative thinking to multiple classification and labeling thinking is consistent with the development of human cognition.

Classifiers did not exist in early Chinese language, but evolved from other content words (mainly nouns, verbs and adjectives) based on pragmatic needs. Based on the specific cognitive mechanism, the original meaning or part of speech of the original word is gradually changed, the quantitative characteristics are gradually highlighted, and then a relatively fixed use structure is formed, and the corresponding noun category is selectively matched. This process is quantifier structuralization. Then, how is quantifier construction derived in this process? What cognitive laws are reflected? These problems are the focus of diachronic investigation.

In view of the large span of the diachronal research period of ancient Chinese, in order to ensure the comprehensiveness and scientificity of corpus selection as much as possible, this part adopts the retrieval method of dual corpora (CCL and The Online corpus of The State Language Commission) to collect and analyze relevant ancient Chinese corpus, and investigates the constructionalization of synonymous category classifiers. The structuralization of classifiers from semantic words to grammatical words involves both functional adjustment (semantic and pragmatic) and structural adjustment (lexical and syntactic) (Givon 1991:122; Traugott & Trousdale 2013). In view of the research focus, this study mainly focuses on functional adjustment and does not focus on structural adjustment.

3. Fine categorization of "Zhong/种"

In terms of its etymology, some scholars believe that "Zhong/种" is related to "Zhong/穜". According to Shuo Wen, "Zhong, yi ye, from hetong's voice", its original meaning is the verb "planting", such as "Zhong/穜" in The Rites of Zhou. The original meaning refers to "early planting late ripening grain", later extended to the noun "seed", such as "The Rites of Zhou" in the "birth of the seed, and presented to the king", late modern simplified as "seed". This study is more inclined to the latter. Firstly, according to the literature, the occurrence time of "Zhong/种" as a verb and a noun is very similar, and the frequency of use is similar. Second, logically speaking, compared with behavior, the former should be the basis of agency or acceptance of the latter. The use of "zhong/种" as a quantifier was first seen in the Han Dynasty.

3.1 Formation of construction of classifier "zhong/种"

In general, the evolution of "zhong/种" before the formation of quantifiers mainly goes from noun (a kind of grain) to noun (grain seed) to noun (race) to quantifier:

(1) There are five kinds of millet, millet, millet, wheat and rice. (Zhou dynasty)

(2) Sheng Sheng Jia Chong. (Spring and Autumn Period)

(3) This wu rice crab species, son will help heaven for abuse, do not avoid its ominous! Mandarin (Warring States period)

(4) Princes and ministers, rather have seed? (Western Han Dynasty)

(5) The family was not yet desireda zhi, but was boldfiesta the old fiesta.　(Eastern Han Dynasty)

(6) Thousands of hidden fruits and vegetables. Of a thousand kinds, there are many words. The Book of Han (Eastern Han Dynasty)

In the early ancient times, "Zhong/种" was mainly used as a noun. At first, it generally referred to "grain", such as "Guyi Wuzhong", and later it could be referred to "grain seed", such as "Danjiang Jiazhong". The meaning of "seed" is realized through the metaphorical thinking of part (seed) and whole (grain), and has obvious concept characteristics of "+ source". Later, "kind" can also refer to "biological seeds", such as "rice crab species". In the late ancient period, the usage of "kind" denoting "race" began to appear, such as "Rather have seed". The metaphorical mapping of the concept of "+ source" is the key to realize this semantic transformation. The use of "zhong" as a quantifier can be seen in the Eastern Han Dynasty, which means "a collection of things or concepts in the same category" and often matches with biological objects, such as "thousand kinds of fruits and vegetables". It is the cognitive mechanism of the formation of the "kind" quantifier that the concept of "+ source" is separated from the entity and highlighted through metonymy.

3.2 Construction evolution of classifier "Zhong/种"

1) Ancient Chinese

(1) Its leaves are thousands of colors, with a hundred kinds of paintings, such as Tiangem. (Eastern Han Dynasty)

(2) Get eight kinds of sound into trillion sound? (Eastern Han Dynasty)

(3) So the rise of ten thousand kinds of disasters, not the discipline, this by the comer accumulate for a long time. (Eastern Han Dynasty)

(4) Yi Di fu ten thousand kinds of different categories, all get old. Taiping Jing (Eastern Han Dynasty)

The classifier "zhong" was formed in the Eastern Han Dynasty. As mentioned above, it was mainly used for biological objects at the beginning, then extended to non-biological concrete things, such as "Hundred kinds of paintings", and gradually became the mainstream of this period. The word "zhong" is sometimes paired with abstract things, but it is often seen in religious books, such as Buddha's Saying boat and Taiping Sutra, but rarely in secular works. This may be because religion is essentially a philosophy to explore the relationship between man and the world, with profound meanings. Only by concreting abstract and difficult religious teachings can they be understood by secular people. For example, the logic foundation of Buddhism -- the theory of Reason and Ming is composed of "five methods", such as sect, cause, simile, combination and junction, among which metaphor is the key link and means of demonstration (Liu Wenying 2012:421-425). In form, the quantifier constructions of "kinds" in this period were mainly composed of "number + quantity + name", and the number of numerals was usually huge, such as "qian" and "wan". From the perspective of cognitive mechanism, the expansion of quantifier "species" from biological things to non-biological concrete things and then to abstract things is realized through the projection and expansion of the concept of "+ source" by metaphor mechanism. The collocation of nouns is shown in the following table.

Since the collocation of the classifier "Zhong/种" did not change much in the Middle And late Ancient periods, the two periods are discussed together here.

2) The Middle Ages

(1) Take a thousand kinds of medicine, raise the three animals, but do not know the art of the house. (Wei, Jin, Southern and Northern Dynasties)

(2)There are a thousand kinds of little things every day. (Southern and Northern Dynasties)

(3) Its method to May 5 gather 100 kinds of insects, big to snake, small to lice. (Tang Dynasty)

(4)Year after year is a long period of resistance, ten thousand kindness only know.   (Tang)

(5) Such as people get baoshan, 100 kinds of pearl Jane search. (Five Dynasties)

3) Ancient times

(1) A hundred kinds of sad, a few kinds of trouble, no personal pity. (Song)

(2) Like a man who sells a hundred kinds of goods in one shop with jinbao. (Song Dynasty)

(3)You leave half a day charm, I picked up ten thousand kinds of thinking. (Yuan)

(4)Although there are thousands of dendrobium stuffy bosom, a hundred kinds of spring sorrow, difficult on my brow. (Yuan)

(5) A romantic thousands of states: look at the fragrant muscle double ying, jade xiao dark products, wu Tongue steal taste. (Ming Dynasty)

Table 1 Noun collocation category of the classifer "Zhong" in ancient Chinese

Category	noun collocation	features
Biological (58)	Vegetables, birds, etc.	"+source" "+biological category "
Non-living (45)	Painting, stone, etc	"+source""+non-living category "
Abstract（17）	Sound, disaster, etc	"+ source" "+ abstract things"

The usage of the classifer "zhong" was more diverse in the Middle Ages. In addition to continuing the usage of the previous period, the collocation with abstract things was no longer limited to religious classics, and began to appear in a large number of secular texts, which could be used for any "collection of things or concepts in the same category". This shows that the use of the quantifier "kind" has become mature in this period. In the late ancient period, its usage did not change significantly. In form, it is still dominated by the structure of "number + quantity + name" with large values. This shows from one side that the quantifier "kind" not only represents the same category of things, but also focuses on the distinction between different categories. The collocation of nouns is shown in the following table:

Table 2 Noun collocation category of the classifer "zhong/种" in Middle And late Ancient Chinese

Category	Noun collocation	Features
Specific（153）	Goods, grass, etc.	"+source" "+ Specific things"
Abstract （84）	Sound, disaster, etc.	"+source" "+ Abstract things"

To sum up, the classifier construction of "Zhong/种" can be seen as early as late Ancient Times, which evolved from the noun "species" (grain). In form, it mainly adopts the construction of "number + quantity + name" in the three periods, and numeral words are usually larger, such as "hundred", "thousand" and "wan", which also reflects that it highlights the difference between different categories in semantics, which is different from another category quantifier "class". In terms of collocation, it mainly inherits the concept of "+ source" in the noun (seed), and its semantic has been relatively stable. It mostly represents "the collection of things or concepts in the same category", basically showing the evolutionary track from biological things to non-biological concrete things, and then to abstract things. Compared with "class", its quantifier appeared earlier, so it was matched with the superior concept category earlier and gradually solidified. In terms of cognitive mechanism, both metonymy and metaphor play a key role in the formation of its quantifier construction, while its construction evolution mainly relies on the projection of the concept of "+ source" by the metaphorical mechanism.

4. Fine categorization of "lei/类"

From the perspective of etymology, "lei/类" can be seen as early as in ancient times. According to Shuowen, "category is similar, except dogs. Anonymous: From dog, anonymous "means" a collection of mere like objects ", as exemplified by Xunzi: "trees and trees are alive, beasts and beasts are alive, and objects only by means of their own kind". In the Ming edition of The Jin Dynasty, the simplified Chinese character "lei/类" began to appear. The quantifier "class" appeared roughly in the Middle Ages. We can observe its constructional process in the following two stages.

4.1 Formation of construction of clasifier"lei/类"

In terms of etymology, the early "lei/类" mainly contains two conceptual features of "+category" and "+similarity". Before the formation of quantifier, it mainly experienced the evolution track from noun to verb to quantifier:

(a) Noun

(1) According to the heaven of the kiss, according to the earth of the kiss, each according to its kind. (Zhou Dynasty)

(2) What is its class dimension? Guo Yu ·Xia Yu of Zhou (Spring and Autumn Period and Warring States Period)

(3) Confucius said, "There is no class without teaching." (Spring and Autumn Period and Warring States Period)

(b) Verb

(1) The old said that the five elements, very rare violation and no class. (Spring and Autumn Period and Warring States Period)

(2) The body is not straight, do not believe, righteousness is not one (Western Han Dynasty)

(3) Five colors qingming, its like anger. (Spring and Autumn Period and Warring States Period)

(30)Trapped for the world frivolous son, the so-called painting tiger is not anti-dog. (Eastern Han Dynasty)

(4) There are gods like horses, whose voices are like oxen, leading the year out. (Southern and Northern Dynasties)

(c) Quantifiers

(1) Therefore, there are a group of Taoists, Confucian scholars and idle monks who take part in meditation. (Tang Dynasty)

(2) Thus are the twelve types of life in the world, unable to complete themselves, living according to the four foods. (Tang Dynasty)

In the early ancient times, the noun "lei/类" mainly meant "collection of similar things", namely "category", such as "teaching without class", and then derived the meaning of "law, rule", such as "extremely rare violation without class", this change is achieved by metaphorically projecting the concept of "+ similarity" in "collection of similar things". In addition, the development of ancient Chinese dialectics is also one of the reasons for this change. It is the basic problem of dialectics to explore the generic relation between things. Mojia was the first to systematically discuss the logical meaning of "category" and regard "category" as one of the basic rules of logical inference (Fang Keli 1994). In the Spring and Autumn period and the Warring States Period, the verb usage of "type" began to appear, mainly denoting "similarity and likeness". For example, in the Silk book of Xiangma Jing of the Han Dynasty tomb in Mawangdui, there is the usage of "its shape type anger". The main cognitive mechanism of this transformation is to refer to the relationship between individuals in the category by metonymy (whole-part).

Class did not appear in quantifier usage until the late middle Ages, denoting "a collection of things or concepts of the same category". In form, it often appears in the structure of "one + quantity + name". For example, there is a record of "a kind of Taoist Priest" in "Zen Source Quanzhu preface" in tang Dynasty, which reflects the characteristic of "kind" emphasizing the unity of category. In terms of

collocation, the classifiers "class" in the initial stage of collocation are mostly people. The ancient Greek philosopher Protagora once put forward that "man is the measure of all things", which is an important principle of "embodied cognition" in the philosophy of experience. Since ancient times, there has also been a view of "close to the body, far from all things", that is, people always start from themselves, and then external things and abstract concepts to construct cognition (Wang Yin 2007:10; Ungerer&Schmid 1996:35). This cognitive feature not only exists at the level of our thinking, but also externalizes at the level of thinking based language.

This study holds that the evolution of the category classifier is not derived from the verb category, but directly from the noun category. For, on the one hand, the noun "class" is not dead, but used in parallel with the verb; On the other hand, from the perspective of cognitive economy, nouns and quantifiers are closer to each other both grammatically and semantically. By means of metonymy, it is the main cognitive means to separate and highlight the "+similarity" and "+category" in the noun category from the entity.

4.2 Construction evolution of "lei/类"

1) Middle Ancient Chinese

(1) Buddha and Tao such a person, life is not easy to see the tathagata face.   (Tang Dynasty)

(2) There are no two kinds of Yang, whose mouth is white and whose name is kind. (Five Dynasties)

(3) This push search analysis, color has four categories of earth, water, fire and wind.   (Five Dynasties)

(4) Variations can be divided into two categories: the first category is about Buddhist scriptures and Buddhist stories, and the second category is about Chinese history stories. (Five Dynasties)

In the Tang Dynasty, the classifier "Lei/类" was still mostly used for people. In the Five Dynasties, the collocation objects began to become more diverse, showing the trajectory from people to concrete things and then to abstract things, almost covering everything. In terms of cognitive mechanism, the concept of "+similarity" and "+category" in the object "man" is projected to other objects through metaphor, so that the collocation category is constantly expanded and generalized. In form, "name + number + quantity" or "quantity + number" constructions are most common. The collocation of nouns is shown in the following table:

Table 3 Noun collocation of the classifier "lei/类" in Middle Chinese

Category	noun collocation	features
Human（68）	People, Taoist, etc	"+ similar" "+ collection of people"
Concrete things （32）	Bird,food,etc	"+similarity" "+concrete things"
Abstract things（19）	color, variation, etc.	"+similar" "+ abstract things"

2) Late Ancient Chinese

(1) In his country, there is a kind of man as naked as a horse. (Song Dynasty)

(2) There is a class of sons who are neither filial nor polite.

(3) Hearing this, the Tibetan jumped to his feet and cried, "You are all a kind of evil, so as to lure me!"   (Ming Dynasty)

(4) Such medicines as polygonum multiflorum, millennium pine root and poria cocos gallbladder are not surprising. (Qing dynasty)

In the modern and ancient times, the collocation category of the classifer "Lei/类" did not increase significantly compared with the previous stage, and was relatively stable semantically, still representing "the collection of things or concepts in the same category". But in the form of quantifier construction, "number + quantity + name" structure is the majority, which is very close to modern Chinese. In addition, "yi" is the most common numeral collocation, while other numeral collocation is less, which is related to the similarity of things, on the other hand, it is also related to the use of another category

clasifier "Zhong/种". The collocation of nouns is shown in the following table:

Table 4 Noun collocation of the classifier "Lei/类" in late ancient Chinese

Category	noun collocation	features
Human（165）	Human,family, etc.	"+similarity""+ people"
Specific things（86）	Evil things, drugs, etc.	"+similarity""+specific things"
Abstract things（37）	Matter,disaster,etc.	"+similarity""+abstract things"

To sum up, the construction of "lei/类" evolved from the noun "lei/类" and was first used in the late Middle Ages. In form, "number + quantity + name", "name + number + quantity" and "quantity + number" all appear, but generally "number + quantity + name" structure is the majority, among which "one + quantity + name" structure tends to be more obvious, which also reflects the characteristics of highlighting the internal unity of the category. In terms of semantic collocation, it mainly inherits the concepts of "+category" and "+similarity" in the noun "class", and its semantic consistency is relatively stable. At the beginning of its formation, most of its collocation is "man", which is mainly related to the embodied principle of human cognition. Later, the collocation object was promoted and expanded along the track from concrete object to abstract object. In the modern and ancient times, it was basically used for any "collection of things or concepts in the same category". In terms of cognitive mechanism, metonymy plays a major role in the formation of its construction, while metaphor plays a major role in the evolution of its construction.

5. Findings

To sum up, we can find that the nominal distribution of "Zhong/种" and "Lei/类" classifier constructions coexist with similarity and difference. Based on this, we can get the following enlightenment: 1) Metonymy plays a leading role in the formation of "XZhong/LeiN" category classifier construction and is responsible for "concrete relevance" while Metaphor plays a leading role in the evolution of its construction and is responsible for "abstract analogy". 2) Metonymy is also a continuation mechanism of construction extension. Goldberg once proposed that the category extension of constructions mainly includes four kinds of inheritance connections: metaphor, polysemy, exemplification and subcategorization. Obviously, according to the findings of this study, the categorical extension of classifier collocation involves metonymy connection, which is helpful to further explore new features of Chinese quantifier constructions in the future. (3) Embodied cognitive tendency of noun category expansion in Chinese category classifier construction. Embodied principle is an important principle of experiential philosophy and cognitive linguistics. On the one hand, human basic cognition is acquired through the interaction between the body and the external world, and experience determines the way the subject perceives the world. On the other hand, people often start from the nearby things and related basic concepts, and then to other external things and abstract concepts to construct cognition. In the traditional Chinese yi learning, the idea of "taking all bodies near and all things far" is embodied cognition. This cognitive feature not only exists in the thinking level of The Chinese nation, but also reflects in the construction level of the Chinese language. On the whole, the expansion of noun category in the process of category classifier construction basically shows a track of "basic category → concrete category → abstract category" and "adjacent category → distant category", which reflects a significant embodied cognitive tendency.

6. Conclusion

The combination of corpus data analysis and linguistic theory interpretation is the need of theoretical innovation and methodological perfection in the general research of cognitive linguistics. There are few quantitative empirical studies on quantifier collocation. Based on linguistic facts, this paper compares the similarities and differences of the fine categorization distribution of synonymous category constructions, and explores the cognitive mechanism reflected behind them in combination with the relevant theories of cognitive linguistics. This paper complements Goldberg's categorization theory in the study of Chinese classifier constructions, and further excavates the new features of Chinese.

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