

The Structure of Classifier Constructions and Some Related Theoretical Issues

Yang Yongzhong *

(Yunnan University of Finance and Economics, China)

Abstract: Some questions regarding the analysis of classifiers and classifier constructions are raised in this paper. The classifier, as a mere adjunct adjoining to the head, cannot serve as the head of the noun phrase containing it, and as a result, it cannot project as CIP or nP. Under this approach, the DP analysis and the classifier construction theory are further refined. The constituents which precede and follow the classifier are analyzed in terms of their syntactic functions, semantic relations, linear features, feature assignment and syntactic occurrence in order to represent the classifier construction with the X-bar phrase structure theory appropriately and correctly and present a universal approach to classifier constructions in various languages.

Keywords: classifier, classifier construction, head, phrase structure, functional category

1. Introduction

The focus of the paper is the classifier in Chinese as in (1)-(2).

(1) *sān bēn shū*

three Cl book

‘three books’

(2) *zhè sān bēn shū*

this three Cl book

‘the three books’

The classifier, which is the most frequently used word in Chinese, has been the focus of extensive research. Ever since Lü Shuxiang & Zhu Dexi (1953) were published, the research concerning the classifier has never been discontinued. Different scholars with different theoretical backgrounds have proposed different approaches, attempting to provide a complete and accurate explanation of the category. There is much dispute concerning the status of classifiers and classifier constructions in the academia (Lü Shuxiang, 1981; Hu Fu, 1984; Gao Mingkai, 1996; Zhu Dexi, 1982; Li Ruohui, 2000;

* Yang Yongzhong: Professor, School of International Languages and Cultures, Yunnan University of Finance and Economics, Kunming 650221, China. E-mail: wmyoung@sina.com.

Huang Borong & Liao Xudong, 2002; Ma Qingzhu, 1998; Zhang Yisheng, 2003; Chen Lianjun, 2005; Jiang Ying, 2005; Zong Shouyun, 2011; Xu Dan & Fu Jingqi, 2011; Rao Hongquan, 2012; Li Xuping, 2013; An Fengcun & Cheng Gong, 2015). Thus, it has been analyzed in many different ways. What is common among the approaches is that the classifier is analyzed as the head of CIP which heads the numeral classifier noun (NCN) construction (Tang, 1990; Gao Qian, 1993; Xue Ping & McFetridge, 1995; Au Yeung, 1997, 2005; Cheng & Sybesma, 1999; Li, 1998, 1999; Hu Jianhua & Pan Haihua, 2000; Tsai, 2003; Jiang Li, 2012). This approach is just the opposite to the viewpoint that the classifier is a lexical word in the circle of Chinese linguistics. Henceforth, what role classifiers play in the grammatical system and how classifier constructions should be analyzed have aroused a new turn of discussions on classifiers and classifier constructions in the circle of Chinese linguistics (Wu Yicheng & Bodomo, 2009; An Fengcun & Cheng Gong, 2014; Cheng Gong, Yang Daran & An Fengcun, 2015; He Xiaowei & Cai Jilang, 2015). The discussions on classifiers and classifier constructions are in relation to the nature of classifiers and classifier constructions. What is the syntactic status of the classifier? What is the internal structure of classifier constructions? How should classifier constructions be analyzed? In order to solve these problems, this paper attempts to clarify some confusion found in the literature and to propose an alternative explanation under the framework of generative grammar. As a way to determine the syntactic status of the classifier, the paper presents a novel analysis of the DP's criteria for the head, the syntactic status of functional categories as well as the syntactic status of the classifier. The arguments concerning the classifier actually differ from one another due to the way of segmentation of the numeral classifier noun (NCN) construction. In our alternative approach, functional categories can function as the syntactic head on condition that they can determine the phrase or clause's syntactic property, the category of their complements, and the agreement between gender, number, and case. Furthermore, they must be syntactically self-sufficient. However, the classifier cannot function as the head of the NCN construction, for it does not have the features mentioned above.

The organization of the paper is as follows. Section 2 presents a criticism of some relevant explanations concerning classifiers and classifier constructions. Section 3 focuses on the main features of classifiers. Section 4 addresses the internal structure of classifier constructions. Section 5 is the conclusion.

2. Some relevant explanations and their problems

Since there are too many previous analyses of classifiers and classifier constructions, it is impossible to cover all of them in this paper. Therefore, I will only discuss some previous analyses that are relevant to motivate my own analysis of classifiers and classifier

The Structure of Classifier Constructions and Some Related Theoretical Issues

constructions in Chinese, with a focus on those performed in the framework of generative grammar, including Tang (1990), Xue Ping & McFetridge (1995), Au Yeung (1997, 2005), Cheng & Sybesma (1999), Hu Jianhua & Pan Haihua (2000), Tsai (2003), and Cheng Gong, Yang Daran & An Fengcun (2015), which have sparked off an intense debate on the syntactic status of classifiers and classifier constructions in the circle of Chinese linguistics.

Generative linguists universally believe that the classifier is a functional category which has its own projection. Hence it is analyzed as the head of the classifier construction, as shown in (3). There are, however, differences among the linguists. Some claim that the classifier and the numeral should be analyzed as a syntactic object and hence they are generated under the same node, viz. the head position (Tang, 1990; Xue Ping & McFetridge, 1995), as shown in (3a). Others argue that the numeral and the classifier should be analyzed as separate constituents. In effect, the numeral serves the function of the head of the CIP (Au Yeung, 1997, 2005; Cheng & Sybesma, 1999; Hu Jianhua & Pan Haihua, 2000; Tsai, 2003), as shown in (3b).

- (3) a. [_{CIP} Spec[_{CI} Num CI[_{NP} N]]]
 b. [_{CIP} Num[_{CI} CI[_{NP} N]]]

Under the two approaches, the classifier has the same syntactic status, viz. the head status. They refuse the hypothesis that constituents preceding and following the classifier belong to the same clause and deny the modification of the internal structure of the classifier construction. It is argued that the classifier in Chinese is a functional head, the feature of which facilitates the projection of the classifier to CIP. The reason for it is that the classifier is a syntactic head, which bears the feature [+N]. According to the head theory, the grammatical feature of the head determines the grammatical feature of the whole phrase (i.e., its maximal projection). Thus, since the classifier bears the categorical feature [+N], CIP bears the categorical feature [+N], as illustrated in (4) and (5).

- (4) a. [_{CIP} Spec[_{CI} *sān* *běn* [_{NP} *shū*]]]
 three CI book
 ‘three books’
 b. [_{CIP} *sān* [_{CI} *běn* [_{NP} *shū*]]]
 three CI book
 ‘three books’
 (5) a. [_{CIP} Spec[_{CI} *sān* *cì* [_{NP} *chūchāi*]]]
 three CI go-on-business
 ‘going on business three times’
 b. [_{CIP} *sān* [_{CI} *cì* [_{NP} *chūchāi*]]]
 three CI go-on-business
 ‘going on business three times’

As (4) and (5) show, the classifier is a Cl. It bears the categorical feature [+N] and determines the feature of the CIP headed by it. Thus, CIP's categorical feature is nominal. It follows that the classifier functions as the head of XP.

Based on Tang (1990), Xue Ping & McFetridge (1995), Au Yeung (1997, 2005), Cheng & Sybesma (1999), Hu Jianhua & Pan Haihua (2000), and Tsai (2003), Cheng Gong, Yang Daran & An Fengcun (2015) argue that the classifier is a light noun *n*, which is a functional category bearing partial nominal features. The light noun *n* takes NP as its complement, and the numeral phrase functions as its specifier. In terms of derivation sequence, *n* first merges with NP, which is prior to the merger of *n* and NumP. Obviously, the merger of *n* and NumP is not so close as that of *n* and NP.

(6) [_{NP} NumP [_n n NP]]

(7) a. [_{NP} [_n *gè* *rén*]]

Cl person

b. [_{NP} *sān* [_n *gè* *rén*]]

three Cl person

'three persons'

As (6) and (7) show, the classifier *gè* is base-generated in the light noun position *n*. It first merges with the noun complement *rén* to give rise to the combination *gèrén*. Then the combination merges with the numeral to give rise to the light noun construction nP and constitutes a phase. The classifier *gè*, which bears uninterpretable feature [+affixability], searches in the local domain for the noun *rén*, which bears the interpretable feature [+N] and the uninterpretable feature [-countability]. The operation Agree takes place between *gè* and *rén* and deletes the uninterpretable feature [-countability] of *gè* and *rén*. Then the derivation converges (Cheng Gong, Yang Daran & An Fengcun, 2015).

Indeed, the approaches to the classifier have many advantages. They can provide a unified underlying structure for various types of classifier constructions and hence they can account for a lot of language phenomena. There are, however, problems with the two approaches in that they fail to account for why the numeral and the classifier should be positioned under the same node as a whole and the syntactic property of the internal constituents of the classifier construction as well as the relations between the constituents. It is universally claimed that the numeral is a lexical word. The approach that the projection headed by it is positioned above the functional projection headed by the classifier will conflict with the basic idea of derivation by phase. Furthermore, the lexical projection and the functional projection cross each other, which may result in the failure of phase construction and hence leads to the crash of derivation by phase (Cheng Gong, Yang Daran & An Fengcun, 2015). What is most important, the two approaches face the same challenge. That is, they have to prove the plausibility of this type of structure. Second, they must be

The Structure of Classifier Constructions and Some Related Theoretical Issues

able to account for the syntactic relations and the semantic connotations represented by classifier constructions. If the classifier is claimed to be a head, then, the classifier *běn* and the noun *shū* in the phrase *nà sān běn shū* (that three CI book, ‘the three books’) should form a syntactic object and function independently. In contrast, *nà sān* and *běn* do not constitute a syntactic object, nor do they function independently. It follows that language facts do not support the analysis. In principle, there is no necessary connection between the functional word and the head. Whether the functional word can be a head is closely related to the theoretical need, viz. it is a theory-internal problem. Though the classifier is a functional word in the framework of generative linguistics, the functional word is not necessarily a head.

Regarding the functional word as a head, though methodologically possible, is subject to some constraints. In light of the Minimalist Program, functional words which represent grammatical function and lack substantial meaning cannot be heads. Thus, Chomsky (1995), based on the minimalist ideas, argues that AGR’s semantics is vacuous. In fact, it represents grammatical relations. Hence it cannot be a head. It follows that the classifier is not a head. In fact, the classifier always occurs between the modifier and the head.

Cheng Gong, Yang Daran & An Fengcun (2015) are also faced up with the problem which Tang (1990), Xue Ping & McFetridge (1995), Au Yeung (1997, 2005), Cheng & Sybesma (1999), Hu Jianhua & Pan Haihua (2000), and Tsai (2003) have met with in accounting for classifier constructions. Furthermore, they have more problems to solve. At first, Cheng Gong, Yang Daran & An Fengcun (2015)’s nP analysis must prove that the classifier has the head status, and hence it can determine the syntactic property and internal structure of the NCN construction. Nevertheless, the classifier does not have such functions.

- | | |
|--|---|
| <p>(8) a. *<i>nà sān gè rén</i>
 that three CI person
 [_{NP} <i>nà sān</i>[_n <i>gè rén</i>]]</p> | <p>b. *<i>sān rén nà gè</i>
 three person that CI
 [_{NP} <i>sān rén</i>[_n <i>nà gè</i>]]</p> |
| <p>c. *<i>nà rén sān gè</i>
 that person three CI
 [_{DP} <i>nà rén</i>[_{NP} <i>sān</i>[_n <i>gè</i>]]]</p> | <p>d. *<i>rén nà sān gè</i>
 person that three CI
 [_{DP} <i>rén</i>[_{NP} <i>nà sān</i>[_n <i>gè</i> NP]]]</p> |

As (8) shows, the classifier does not determine the syntactic property and internal structure of the NCN construction. The reason for the ungrammaticality of the NCN constructions in (8) lies in the analysis of classifier constructions. Rather, the theory of the head status can neither account for nor predict the grammatical classifier constructions and ungrammatical classifier constructions. This testifies that the classifier does not have the head status.

Secondly, if the classifier is a head, then, it should be able to determine the semantic

roles and linear relations of its preceding and following constituents (Yang Yongzhong, 2017). In this case, the following data should be able to be accounted for in a plausible way.

- (9) a. *zhè sān bēi shuǐ* ([_{DP} *zhè*_{[nP} *sān*_{[n} *bēi shuǐ*]])
 this three Cl water
 ‘the three glasses of water’
- b. *zhè sān gè bēizi de shuǐ* ([_{DP} *zhè*_{[nP} *sān*_{[n} *gè bēizi de shuǐ*]])
 this three Cl glass AUX water
 ‘water of the three glasses’
- c. *sān bēi de shuǐ* ([_{DP} Spec_{[nP} *sān*_{[n} *bēi de shuǐ*]])
 three glass AUX water
 ‘water of three glasses’
- d. *zhè sān bēi de shuǐ* ([_{DP} *zhè*_{[nP} *sān*_{[n} *bēi de shuǐ*]])
 this three glass AUX water
 ‘water of the three glasses’

The differences between the data in (9) cannot be clearly shown in terms of structure. Moreover, the approach that the classifier is a head is not consistent with the language instinct of Chinese native speakers and lacks psychological reality.^① Cheng Gong, Yang Daran & An Fengcun (2015) argue that the classifier, which functions as the light noun *n*, first merges with the noun complement NP to give rise to the combination *n*+NP, which then merges with the numeral. As (9) shows, if the head *n* takes the form of *gè*, its merger with the NP *bēi de shuǐ* would give rise to a strange combination *gè bēizi de shuǐ*. If the light noun *n* occurs in the form of *bēi*, then its merger with the NP *de shuǐ* would also be puzzling. Furthermore, the nP analysis fails to account for the differences between (9a), (9b), (9c) and (9d). In order to account for *sān bēi de shuǐ*, Cheng Gong, Yang Daran & An Fengcun (2015) analyze it as follows.

- (10) [_{DP} Spec_{[D} *de*_{[nP} [*sān*_{[n} *bēi*]_{[NP} *t_i shuǐ*]]]]
-

As (10) shows, *de* is the phonetic realization of D. Its feature is strong. Therefore, it must be checked by the constituent in the specifier position. That is, the strong EPP feature of *de* requires that the nominal combination *sān bēi* move overtly to the specifier position of DP to give rise to the surface order. Here is, however, a problem. The classifier, which functions as the light noun, is supposed to be base-generated in the light noun position. However, the classifier *bēi* in (10) is base-generated in the specifier position of NP before it

^① Yang Yongzhong (2008, 2010) argues that the expletive *de* is adjoined to the specifier or head and hence it cannot be separated from its preceding noun.

The Structure of Classifier Constructions and Some Related Theoretical Issues

moves to the position n. This analysis is inconsistent with the theoretical hypothesis Cheng Gong, Yang Daran & An Fengcun (2015) have proposed. It is self-evident that they are self-contradictory and ad hoc. This suggests that the nP analysis cannot describe the internal structure and semantic relations of classifier constructions accurately (Yang Yongzhong, 2017).

Thirdly, if the classifier is a head, then, it should be able to determine the syntactic representation of the constituents preceding and following the classifier. That is, it can decide whether these constituents occur overtly or covertly.^① For example:

- (11) a. *zhè jiān wū* = *zhè wū* b. *zhè bēi shuǐ* = *zhè shuǐ*
 this Cl room this room this Cl water this water
 [_{DP} *zhè*_{[nP} Num[_n *jiān wū*]]] [_{DP} *zhè*_{[nP} Num[_n *bēi shuǐ*]]]
 [_{DP} *zhè*_{[nP} Num[_n \emptyset *wū*]]] [_{DP} *zhè*_{[nP} Num[_n \emptyset *shuǐ*]]]

The nP analysis cannot account for why the classifier *jiān* in (11a) can be omitted while the classifier *bēi* in (11b) cannot though both of them have the same surface structure and deep structure. It is true that *zhè shuǐ* is grammatical. For example, *zhè shuǐ shì zhēn de liáng* (this water is really cold, ‘the water is really cold’). However, whether *zhè shuǐ* is equal to *zhè bēi shuǐ* is not certain. An anonymous reviewer claims that *zhè bēi shuǐ* can be transformed into *zhè bēi*, which proves that the classifier *bēi* functions as the head of the NCN construction. Whether *bēi* is present or not, its head status is not affected. We disagree with this claim. We argue that *zhè bēi* is grammatical, which shows that the classifier is a clitic adjoined to the demonstrative. *Zhè bēi* is equal to *zhè yī bēi*, which shows that the numeral and the classifier incorporates into a syntactic object. Since the numeral *yī* ‘one’ is equal to the indefinite article, it tends to weaken phonologically. Both *zhè bēi shuǐ* and *zhè bēi* show that the classifier *bēi* is definite and its number is *yī* ‘one’, which implies that the numeral occurs covertly when it takes the form of *yī* ‘one’. It testifies to our argument that the classifier is not a head.

Fourthly, the nP analysis is not in accordance with the principle of the head. According to the principle of the head, the grammatical property of the phrase is determined by the head. Its structure is shown as follows (Yang Yongzhong, 2017).

- (12) [_{XP} ZP [_{X'} X YP]]

As (12) shows, each category has three layers, viz. X, X' and XP. Each maximal projection has a specifier (Spec) and complement (Comp). The former is the sister node of X' while the latter is the sister node of X. The syntactic property of X and XP must be consistent with that of the head. The basic structural relation between phrases is linear

^① In the light of Li (2007), an empty category projects for the purpose of satisfying the constraint on the selection of the head.

linking relation between the head, specifier and complement. In the framework of the Minimalist Program, the linear linking relation is simplified as a merger. That is, the head merges with the complement in accordance with the grammatical features of categories by following the working mechanism of binary branching to give rise to X' , which remerges with the specifier to generate a chain of phrase structures. In effect, the basic constituents in phrase structure reveal the grammatical features of the categories. To put it differently, the constituent in each category has the features of the head which are the distinctive features of the categories. Hence they decide whether each constituent selects other categories as its complement (Radford, 2001:29-56; Yang Yongzhong, 2008, 2010, 2014, 2017).

In effect, the light noun *n* does not govern NP. It neither determines the syntactic representation of NP, nor does it determine the syntactic representation of the whole NCN construction. It is the head that determines NP. That is, the numeral that occupies the head position determines the syntactic representation of the NCN construction. A phrase is characteristic of number in that the construction contains a numeral, which has nothing to do with the classifier. It follows that it is the numeral that causes a phrase to become a numeral phrase which can occur on its own and serves the function of a syntactic constituent. Without the numeral, a construction with the classifier and the noun only would be ungrammatical, as illustrated in (13).

- (13)* *zhèn chōuqì* / **cì chūchāi* / **tàng chūmén* / **chǎng dǎdòu*
Cl weep Cl go-on-business Cl leave Cl fight

It must be pointed out that the numeral is the head of NCN, which does not mean that the numeral is indispensable. In effect, it means that the numeral determines the features of NCN. To put it differently, the numeral determines the number or quantity of the construction. In contrast, the classifier only determines the category of the noun. The numeral may occur covertly when it has weak quantificational features. In this case, it takes the form of *yī* ‘one’, which is similar to an indefinite article in terms of semantics. Usually, the indefinite article has a weak form in terms of pronunciation. Therefore, the construction “classifier + noun” results from the phonological weakening of the numeral. In this case, the construction “classifier + noun” is positioned in the part of given information, which can trigger subsequent classifier grammaticalization processes, such as the classifier’s evolving into a demonstrative pronoun. Since only when the numeral takes the form of *yī* ‘one’ can it occur covertly, we argue that *yī* ‘one’ is a default number, which implies that no numeral but *yī* ‘one’ can occur covertly. It follows that it is the numeral that determines the number or quantity of NCN.

Obviously, the classifier cannot determine the syntactic representation of the phrase containing it. The contrast between the two pairs in (14) suggests that the presence or

absence of the classifier has no influence upon the syntactic representation. An anonymous reviewer claims that the classifier *zhèn* in (14) is not omitted shows that it is indispensable and it is the feature of the head. We disagree with the claim. We argue that the classifier is not a daughter of the phrasal node onto which it projects the relevant categorical status. It cannot subcategorize for and govern its sisters. Nor can it determine the actual categorical status of its sisters. Therefore, the existence of the classifier is not a sufficient basis for establishing the status of the head (Hawkins, 1995:343-358; Yang Yongzhong, 2017, 2018, 2019, 2021). In effect, whether the classifier occurs or not cannot change the structural property of the phrases. In terms of (15), the classifier does not occur, but the phrases are grammatical. It is suggested that there exists obligatory selection relation between the numeral or the demonstrative and the classifier. That is, the numeral or the demonstrative is indispensable (Yang Yongzhong, 2017).

- (14) a. *yī zhèn chōuqì / yī cì chūchāi / yī tàng chūmén / yī chǎng dǎdòu*
one Cl weep one Cl go-on-business one Cl leave one Cl fight
b. *chōuqì yī zhèn / chūchāi yī cì / chūmén yī tàng / dǎdòu yī chǎng*
weep one Cl go-on-business one Cl leave one Cl fight one Cl
- (15) a. *yīcǎo yīmù / liǎngshì yīfǎng*
one-grass one-wood two-room one-hall
b. *nà rén / zhè wū*
that person this room

The classifier does not change along with the increase of the quantity of the numeral. In contrast, there is an interaction between the noun and the quantity denoted by the numeral. It follows that the occurrence or non-occurrence of the classifier has no effect upon the representation form of the noun. In the same vein, it has no influence upon the syntactic representation of the whole phrase. As a result, the so-called assumption that the classifier determines the property of the NCN construction does not hold water. The head D determines the type of the adjunct. Nevertheless, the classifier does not occupy the position D. In effect, the classifier positioned in the position D cannot govern its complement. As a consequence of this, a syntactic object cannot be constituted. Likewise, the classifier and the noun cannot function as a whole, nor can they function as a syntactic constituent. The classifier is more adjacent to its preceding constituent than to its following constituent. Therefore, the construction “numeral + classifier + noun” should be analyzed as [[numeral + classifier] + noun] instead of [numeral + [classifier + noun]], for the classifier cannot serve the function of the head D. It cannot determine the categorical features, linear relations, AGR features, and case assignment of the whole attributive. In effect, there is no direct relation between the classifier and the specifier ZP. Similarly, it is not directly related to the complement YP. Thus, Cheng Gong, Yang Daran & An Fengcun (2015)’s approach

fails to account for the data in (8)-(11) and predict grammatical classifier constructions and ungrammatical classifier constructions. In this case, Cheng Gong, Yang Daran & An Fengcun (2015) also falls into the theoretical dilemma shared by Tang (1990), Xue Ping & McFetridge (1995), Au Yeung (1997, 2005), Li (1998, 1999), Cheng & Sybesma (1999), Hu Jianhua & Pan Haihua (2000), and Tsai (2003).

Fifthly, the nP analysis lacks linguistic universalism.^① If the classifier in Chinese is assumed to be a functional category, the classifiers in the Tibeto-Burman, Dong-Tai, and Miao-Yao languages as well as Altaic and Austro-Asiatic languages should have the same syntactic status. However, according to Xu Dan & Fu Jingqi (2011), whether the NCN construction takes the form of “numeral + classifier + noun”, which is found in Dong-Tai, Miao-Yao, Altaic and Austro-Asiatic languages, “noun + numeral + classifier”, which is found in the Yi and Qiang branches of the Tibeto-Burman family, or “noun + classifier + numeral”, which is found in the Tibetan and Jingpo branches of the Tibeto-Burman family, the classifier occurs either between the numeral and the noun or behind the numeral. It cannot occur before the noun or the numeral independently. In the same vein, the noun cannot occur between the numeral and the classifier. The classifier cannot be separated from the numeral to which it is adjoined. It cannot serve the function of the syntactic head. This conclusion has been testified cross-linguistically and hence it has the significance of universal linguistic typology. This suggests that the nP analysis lacks the descriptive and explanatory adequacy (Yang Yongzhong, 2017).

3. The main features of classifiers in Chinese

This section attempts to develop a new approach to the classifier in Chinese by discussing its main features. It is generally believed that the classifier is a functional word. Its features are as follows: 1) it is a closed category; 2) it is phonologically and morphologically dependent, because it is a bound morpheme which is pronounced in a soft voice; 3) it selects only one complement, which is not its argument; 4) it denotes grammatical relations.

As a functional word, the classifier cannot determine the syntactic features of the phrase containing it. It does not behave like a head in regard to the characterization of phrase structures because there is neither classifier-phrase nor subcategorization requirement for a classifier-phrase. It does not project categorical features to create phrases headed by it. The category of the phrase projected is determined by the constituent merged with the classifier

^① We disagree with an anonymous reviewer's claim that the numeral first merges with the classifier and hence the classifier is the head. We argue that the merger between the numeral and the classifier only proves that the classifier is c-commanded by the numeral and serves the complement of the numeral. The numeral assigns subcategorization features to the classifier.

The Structure of Classifier Constructions and Some Related Theoretical Issues

and this constituent functions as the head of the phrase (Li, 2007; Yang Yongzhong, 2008, 2014, 2017, 2018).

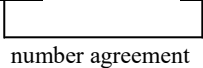
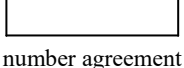
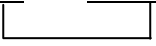
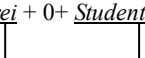
The classifier does not mark the number of the noun following it and hence it cannot serve the function of the head of the NCN construction. In effect, it is only a clitic adjoined to the head. It serves the function of a linking item which links various specifiers or complements with the head. It can be adjoined to the numeral or the demonstrative to denote quantity and reference. As a consequence, it cannot project to a CIP. It is to be noted that the classifier and the numeral constitute a complete functional complex. The relation between the numeral and the noun is the specifier-head relation. Thus, the numeral must agree with the noun. The classifier, as a linking item, links the numeral with the noun. The meaning of quantity and the meaning of reference are assigned by the numeral and the demonstrative, respectively. The numeral and the demonstrative may change the morphology of the noun, whereas the classifier may not have such effect. It is noteworthy that only one classifier can occur in the NCN construction. To put it differently, only the numeral that is adjacent to the noun can be followed by a classifier while the classifier that follows the demonstrative must be deleted. This suggests that the classifier does serve the function of the linking item between the numeral or demonstrative and the noun. There is no need for the classifier to occur between the numeral and the demonstrative as a linking item and hence the classifier must be deleted.

Since an NCN construction can contain only one classifier which must be in the position adjacent to the noun, the occurrence of the classifier must be licensed by the head. On the whole, a phrase can have only one head. The nominal classifier cannot function as the predicate, whereas the verbal classifier can. The classifier does not change along with the increase of the quantity of the numeral. In contrast, the noun changes along with the increase of the quantity of the numeral. Compare the following data.

- (16) a. *yī gè xuéshēng* / *sān gè xuéshēng* (Chinese)
one CL student three CL student
'one student' 'three students'
- b. *one student* / *three students* (English)
- c. *eins Student* / *drei Studenten* (German)

As (16) shows, whether the numeral is *yī* or *sān*, the classifier and the nouns are always the same, i.e. *gè* and *xuéshēng*. There is no change in terms of the form of the classifier and the noun. In contrast, in terms of English and German numeral noun constructions, if the numeral denotes the concept of one, then, the noun occurs in the singular form. If, however, the numeral denotes the concept of three, the noun must occur in the plural form. In this case, the English plural marker *-s* and the German plural marker *-en* must be added to the nouns. It is self-evident that it is the numeral rather than the classifier that affects the

morphology of the noun and the syntactic representation of the whole construction.^① The internal structure of the NCN constructions and the agreement relations between the numeral and the noun in (16) can be shown as follows.

- (17) a. numeral + classifier + noun (Chinese)

 b. sān + gè + xuéshēng
 three CI student
- (18) a. numeral + 0 + noun + plural marker (English and German)

 b. three + 0 + student + -s (English)

 c. drei + 0+ Student + -en (German)


Semantically, a classifier can match with a variety of nouns. It is in accordance with the requirement of the endocentric construction, namely, only the immediate constituent that has the same function and semantic constraint as the whole construction can serve the function of the head of the endocentric construction. The classifier does not have distinctive semantic features. Take the Chinese classifier *zhāng* for example. It can match with *liǎn* ‘face’, *zhǐ* ‘paper’, *hǎibào* ‘poster’, *zhuōzi* ‘table’, and so on. Thus, if we hear *yī zhāng* (one CI), we do not know what its specific semantics is unless *yī zhāng* is followed by a noun, for *yī zhāng* can be followed by a lot of nouns, which suggests that there are innumerable possibilities of combinations. Similarly, the German noun *Stück*, which serves the function of the classifier, can denote a lot of concepts and hence it can match with a lot of nouns, as shown in (19). Whether it is positioned between the nouns or behind the numeral, it remains the same with no regard to the concept of the quantity of the numeral.

- (19) a. *eins Stück Brot* / *eins Stück Vieh* / *eins Stück Arbeit* / *eins Text stück*
 one CI bread one CI livestock one CI work one text CI
 ‘a piece of bread’ ‘a domestic animal’ ‘a piece of work’ ‘a passage’
 b. *drei Stück Brot* / *drei Stück Vieh* / *drei Stück Arbeit* / *drei Text stück*
 three CI bread three CI livestock three CI work three text CI
 ‘three pieces of bread’ ‘three domestic animals’ ‘three pieces of work’ ‘three passages’

^① The contrast between (16), (17) and (18) aims to prove that it is the numeral, not the classifier, that affects the morphology of the noun.

The Structure of Classifier Constructions and Some Related Theoretical Issues

In terms of semantics, the noun is the head of the noun phrase because the semantic constraint that the noun is subject to is the same as the semantic constraint that the whole construction receives. It can be modified by the numeral and the adjective, whereas the classifier cannot. The semantic constraint that the noun is subject to is not applicable to the classifier. Take for example the construction *yī tiáo piàoliàng de qúnzi* (one CI pretty AUX skirt, 'a pretty skirt'). It can be transformed into *piàoliàng de qúnzi*, but not *piàoliàng de tiáo*.

In terms of syntactic structure, the NCN construction is head-initial, whereas in terms of semantic structure, it is head-final. It is self-evident that syntactic structure and semantic structure constitute a mirror effect. As far the head-initial structure is concerned, its linear order is "genitive + demonstrative + numeral + CI + descriptive attributive + noun". The genitive denotes ownership, i.e., the attribution of the noun. The demonstrative denotes reference, i.e., the specificity and definiteness of the noun. The numeral denotes the concept of the quantity or number of the people or things which the noun entails. The descriptive attributive modifies the concept of the noun. All the constituents preceding the noun are the modifiers of the noun. Obviously only the noun is the object that is modified and expounded upon. In all the modifiers, the genitive occupies the specifier position of DP headed by the demonstrative. The demonstrative occupies the head position of DP. The numeral and the classifier occupy the head position of NumP headed by the numeral. NumP is embedded within DP and serves the function of the complement of DP. The classifier, as a clitic, is adjoined to the numeral. It denotes the concept of quantity or relation. It does not have an independent syntactic status and hence it cannot occupy a syntactic position alone. Like the English and German plural markers which cannot be separated from the nouns to which they are adjoined, Chinese classifiers cannot be separated from numerals and occur alone in syntactic structure. Generally, the descriptive attributive is analyzed as a syntactic object of the noun. It occupies the complement position of NumP and serves the function of the direct complement of the numeral and the classifier. In effect, it is also the indirect complement of the genitive and the demonstrative. It follows that the noun is modified by all the constituents preceding it.

In terms of semantic relation, the noun bears the semantic weight of the whole NCN construction. The semantic constraint that the noun is subject to is one that the whole NCN construction must be subject to. Any constituent preceding the noun can be partially subject to the constraint. This suggests that the semantics of the noun is the basic semantics of the whole NCN construction. The aim of the constituents preceding the noun is to modify and expound upon the semantics of the noun. It follows that semantic weight does not correspond to structural weight and hence they are not identical.

The classifier lacks distinctive semantic features and semantic selection ability. It cannot

mark the features of gender, number and case. Rather, all these nominal features cannot be shown on the classifier. Take the German word *Stück* for example again. When it occurs as a neutral noun, it inflects with regard to gender, number and case, like all the other nouns. As a classifier, however, it remains the same with no regard to the preceding numeral and the following noun as well as the syntactic function, which is in striking contrast to the situation where it occurs as a common noun. This suggests that the classifier does not mark the features of gender, number and case. It does not change along with the change of the numeral and the noun. Rather, it does not change along with the increase of the quantity of the numeral. In the same vein, it does not change along with the change of the property of the noun and the syntactic function. This proves that German classifiers and Chinese classifiers have identical syntactic-semantic representations. It is also true of the classifiers in such languages as Achang, Hani, and Dai, as shown in (20). In these languages the linear order of the NCN construction is “noun + numeral + classifier”.^① The classifier is adjoined to the numeral or the demonstrative while the noun precedes the numeral or the demonstrative. Obviously the numeral or the demonstrative determines the position of the classifier in the NCN construction.

- (20) a. *tsu*³³ *ta*³¹ *zu*²³¹ b. *tsu*³³ *sɿ*⁵⁵ *zu*²³¹ (Achang) (Shi Jian, 2009:71)
 person one Cl person two Cl
 ‘one person’ ‘two persons’
- (21) a. *mi*³¹ *tsʰ*^h *ø*³¹ *a*³¹ *ma*³³ *tɕ*^h *i*³¹ *ya*³¹ b. *xu*³³ *tsɿ*³¹ *sɔ*⁵⁵ *za*³¹ (Hani) (Xu Xianming, 2007:47)
 widow one Cl rat three Cl
 ‘a widow’ ‘three rats’
- (22) a. *kun*² *kɔ*⁴ *nunɿ*⁴ b. *kun*² *sa:m*¹ *kɔ*⁴ (Dai) (Huang Ping, 2012:15-16)
 person Cl one person three Cl
 ‘one person’ ‘three persons’

The linear order of the Chinese NCN construction is “numeral + classifier + noun” while the linear order of the NCN construction in Achang, Hani and Dai languages is “noun + numeral + classifier”. The two types of languages are just opposite to each other. Obviously the classifier cannot determine the linear order of the constituents preceding and following it. In effect, what determines the linear order of the NCN construction is the numeral or demonstrative. In the same vein, the classifier does not dominate the noun. It is the numeral or the demonstrative that dominates the noun. The numeral or the demonstrative modifies the noun in terms of the concept of quantity or the sense of reference. In this case, they play

^① The linear order of NCN constructions in the Tibeto-Burman languages is “noun + numeral + classifier” or “noun + classifier + numeral”. The combination “classifier + numeral” is rare. It is only found in such languages as Tibetan, Menba, Luoba and Jingpo. The combination “numeral + classifier” is common. It is found in Yi, Burman, Qiang and Kelun branches (Yang Yongzhong, 2018).

the role of the head of DP. In the framework of the Minimalist Program, the constituent that represents grammatical relations only and lacks specific connotations cannot be a head (Chomsky, 1995:219-394). This suggests that a syntactic head must have some semantic content and be semantically testified and supported (Yang Yongzhong, 2010).

4. The syntactic analysis of classifier constructions

This section attempts to provide a sound analysis of classifier constructions. As shown above, functional categories can function as the syntactic head on condition that they can determine the syntactic property of the phrase or the clause, the category of the complements, and the agreement between gender, number, and case. Furthermore, they must be syntactically and semantically self-sufficient. The classifier, however, cannot function as the head of the noun phrase containing it, for it does not have the features mentioned above. Actually, the classifier is only a linking marker. An anonymous reviewer asks why the classifier is needed in Mandarin but not needed in English. In other words, how can we account for the presence or absence of the classifier in Mandarin and English? We argue that the numeral in English can assign subcategorization features to the noun directly and hence the noun changes overtly with regard to morphology. In Chinese, however, the classifier serves the edge of NP and hence the numeral can only access the classifier, but it cannot access the head N. Therefore, English NNs (numeral nouns) and Chinese NCNs are structurally different, as shown below.

- (23) a. [_{NumP} Num-Cl [_{NP} N]] Chinese NCN
 b. [_{NumP} Num[_{NP} N]] English NN (numeral noun)

As (23a) shows, NumP, which functions as the probe, cannot access the constituent N within the domain NP. As (23b) shows, NumP, which functions as the probe, can access the constituent N within the domain NP. Furthermore, the classifier in Chinese absorbs the subcategorization features assigned by the numeral and hence there is covert agreement between the numeral and the classifier. And there is overt semantic matching and morphological agreement between the classifier and the noun. In contrast, in English, there is no classifier which can absorb the subcategorization features assigned by the numeral. In effect, the features are absorbed by the noun. Consequently, there is overt morphological agreement between the numeral and the noun. The function of the classifier is classification, denoting the unit of measurement. It does not change overtly with regard to morphology. Actually only the noun changes with the number. The subcategorization features of the numeral, classifier, and noun include [\pm Sing]. The numeral requires the classifier to change morphologically, but the classifier remains the same. The classifier does not require the noun to change morphologically. In effect, it requires the noun to agree with it semantically (Yang Yongzhong, 2019). It is used to link the preceding constituent with the

following constituent. The preceding constituent bears the feature [+N] and functions as the possessor while the following constituent bears the feature [+N] and functions as the complement. The classifier can adjoin to the head. Thus, in terms of structural segmentation, it should be segmented together with the head. In view of syntactic distribution, it often functions as the adjoined constituent of the head. It occurs behind the numeral or the demonstrative, but it cannot precede the numeral, because the numeral usually functions as the syntactic head and the classifying property of the classifier determines its being used as a clitic^① following the numeral. It cannot occur before the numeral to denote specificity or quantity of the noun (Yang Yongzhong, 2017, 2018). On the other hand, it can be regarded as a numerical particle, which serves the function of distinguishing with regard to semantics. Take for example *yī kē huāshēng* (one Cl peanut, ‘a peanut’), *yī bǎ huāshēng* (one Cl peanut, ‘a handful of peanuts’) and *yī jīn huāshēng* (one Cl peanut, ‘a kilo of peanuts’). The three NCNs are different with regard to semantics. Sometimes, the classifier serves the function of modification to enhance the visualization of the following noun. For example, *yī lún míngyue* (one /Cl.circular /bright-moon, ‘a bright moon’) and *yī wān míngyue* (one /Cl.curved /bright-moon, ‘a bright moon’).

According to Abney (1987:193-200), D is the head because it can determine the property of specificity, non-specificity, generality and quantity of the noun phrase. D is a component of the phrase in terms of structure. It is structurally related to the noun or verb and hence it is indispensable. It marks the grammatical relations of the phrase. Under the framework of the Minimalist Program, the functional word that represents grammatical relations only and has no concrete meaning cannot function as a head (Chomsky, 1995). Hence, the classifier is only a clitic adjoined to the head. It is not the head of the construction containing it and hence it cannot project to a CIP. It functions as a linking item in terms of structure and links various types of specifiers or complements with the head. It can be adjoined to the numeral or the demonstrative to denote quantity and reference. It contributes nothing to its semantic formation. According to Yang Yongzhong (2008, 2014, 2017, 2018), a functional category used as a head should be able to determine the syntactic features, the types of categories of its complement, the agreement of gender, number, and case between the internal constituents of the phrase, and have syntactic-semantic self-sufficiency^② (Fukui, 1986; Ouhalla, 1991; Xu Jie, 2007).

A constituent cannot be a head unless it is headed by a dependent or peripheral

^① The syntax and PF of the classifier will be discussed in detail below.

^② Syntactic self-sufficiency is defined as follows: A constituent is syntactically self-sufficient iff it has complete syntactic function and serves the function of a sentence constituent on its own. Semantic self-sufficiency is defined as follows: A constituent is semantically self-sufficient iff it is complete or adequate in terms of semantics.

The Structure of Classifier Constructions and Some Related Theoretical Issues

constituent that functions as a determiner or modifier. In this case, the function of the head is to be determined or modified by the dependent or peripheral constituent. In terms of the classifier, it is a grammatical suffix, and it is dependent. It merges with the preceding numeral or demonstrative to form a determiner or modifier headed by the numeral or the demonstrative. In this case, it is the modified constituent that functions as a head. Since it does not have the features of a head, it cannot function as a syntactic head. Actually, it is merely a clitic adjoined to the head. It itself is not the head of the construction in which it is. Hence it cannot project as CIP. Then, what is the syntactic status of the classifier? I argue that the classifier functions as a linking marker in the construction, joining different types of specifiers or complements to the head. It can be adjoined to a noun, pronoun, verb, or adjective to represent such semantic-syntactic relations as quantity and reference. Thus classifier constructions should be analyzed as (24) (Yang Yongzhong, 2017, 2018).

(24) [_{DP}ZP_[D] D-Cl YP]

As (24) shows, the classifier is adjoined to the head and it is part of the head. The head is D, which takes the form of the numeral or the demonstrative. The whole structure bears the feature [+Num] or [+Def], which is due to the existence of D, with no regard to its overtness or covertness. Though the demonstrative and the numeral can be followed by the classifier, only one classifier can occur in an NCN construction. To put it differently, if the demonstrative and the numeral co-occur in a construction, the classifier following the demonstrative must be deleted while only the classifier following the numeral can be preserved.

The classifier is a grammatical constituent indispensable to the quantification of countable nouns in modern Chinese. The pattern “numeral + classifier + noun” is the basic form of classifier constructions. The classifier is closely related to the countable noun. It must co-occur with the numeral or the demonstrative,^① but it cannot occur on its own^② (An Fengcun & Cheng Gong, 2014). It often occurs between the demonstrative and the noun. It can be deleted only in some cases. It must occur between the numeral and the noun. A noun with the numeral only is characteristic of quantity only. In this case, the noun tends to be interpreted as being non-specific. Only the demonstrative can cause the NP to be characteristic of specificity.

^① An anonymous reviewer claims that the classifier can occur on its own because in terms of *bēi shuǐ chē xīn* there is no numeral before the classifiers *bēi* and *chē*. We disagree with the claim. We argue that *bēi shuǐ chē xīn* is an idiom. First, the structural composition and semantic interpretation of the idiom differs from that of free noun phrases. Second, *bēi shuǐ chē xīn* is grammatical because the numeral is a default numeral *yī* ‘one’. When the numeral takes the form of *yī* ‘one’, it tends to occur covertly.

^② In terms of syntax, the repetition of classifiers can serve the function of the predicate independently. If the NCN construction occurs in the object position and the numeral takes the form of *yī* ‘one’, the numeral can be omitted. In this case, the NCN construction occurs in the form of “classifier + noun”.

Yang Yongzhong

- (25) a. *yī liàng chē / nà liàng chē / sān liàng chē / nà sān liàng chē*
 one Cl car that Cl car three Cl car that three Cl car
 b. **liàng chē*
 Cl car
 c. *zhè wū / nà rén*
 this room that person
 d. *zhè jiān wū / nà gè rén*
 this Cl room that Cl person

Therefore, classifier constructions themselves do not bear specific or non-specific information, which is, in effect, conveyed by means of the demonstrative. In the same vein, classifier constructions do not denote the sense of singularity or plurality, which is realized by means of the numeral.

The occurrence or non-occurrence of the classifier in Chinese is related to its position in the classifier construction. The more adjacent it is to the specifier, the more likely it is to be deleted. The more adjacent it is to the noun complement, the less likely it is to be deleted. It can take the form of overlapping. Under this circumstance, only the numeral *yī* ‘one’ can occur with the classifiers, as illustrated in (26). If the demonstrative and the numeral co-occur in the same NP, only one classifier can occur. It is to be noted that the demonstrative must precede the numeral and the classifier cannot co-occur with the demonstrative or the numeral, as illustrated in (27).

- (26) a. (*yī zhèzhèn wēifēng*) b. (*yī duōduǒ xiānhuā*)
 (one) Cl-Cl breeze (one) Cl-Cl flower
 ‘breezes’ ‘flowers’
- (27) a. *wǒde nà piān wénzhāng* b. **wǒde nà piān sān piān wénzhāng*
 my that Cl article my that Cl three Cl article
 ‘that article of mine’ Intended meaning: ‘the three articles of mine’
- (28) a. [DP *wǒde* [D’ *nà piān wénzhāng*]] b. **[DP wǒde nà [D’ piān sān piān wénzhāng]]*

In terms of semantic relations and syntactic structure, the demonstrative is more related to the noun complement while the possessive pronoun is less related to the noun complement. The demonstrative or the numeral which occupies the position D bears specific and definite information or the feature of counting. Hence the demonstrative or the numeral determines the property or structural features of the whole phrase. In contrast, the possessive pronoun is positioned at the outer layer of the phrase structure, viz. the specifier position. Generally speaking, the constituent preceding the functional category is prior to the head in terms of linearity and hence it occupies the specifier position. Its semantic property is determined prior to the other constituents. Once the semantic property of the constituent preceding the category is determined, the semantic property of the other

The Structure of Classifier Constructions and Some Related Theoretical Issues

constituents in the complement position must be determined in accordance with it. This suggests that the determining relation between the semantic properties of the constituents preceding and following the category is unidirectional. The phrase structure is similar to the clause structure. The linearity and semantic relations are not determined by themselves, but by the head. Though the Chinese possessive pronoun precedes the demonstrative linearly and occupies the outmost position of the structure, the features of specificity or non-specificity of the whole phrase are determined by the demonstrative. The constituent preceding the head occupies the specifier position and hence it is interpreted prior to the constituents in terms of linear order. The pattern “possessive pronoun + demonstrative + numeral + classifier + noun” conforms to this principle. Since the classifier is a linking item, it always adjoins to the head and it cannot serve the function of the head on its own. What determines the semantic property of the constituents in the complement position is the head, not the classifier, which can be testified in the following data.

- (29) a. *sān bēi shuǐ* b. *sān bēi de shuǐ* c. *zhè sān bēi de shuǐ*
 three CI water three CI AUX water this three CI AUX water
 ‘three glasses of water’ ‘water of three glasses’ ‘water of the three glasses’
- (30) a. *sān běn shū* b. **sān běn de shū* c. **zhè sān běn de shū*
 three CI book three CI AUX book this three CI AUX book
 ‘three books’

The differences between (29) and (30) cannot be reasonably accounted for under the approaches CIP and nP. The internal structure in (29a) is different from that in (29b) and (29c). In the same vein, (30a) differs from (30b) and (30c) in terms of the internal structure, as shown in (31) and (32).^①

- (31) a. [_{DP} Spec[_{D'} *sān bēi shuǐ*]]
 b. [_{DP} Spec[_{D'} *sān bēi de shuǐ*]]
 c. [_{DP} Spec[_{D'} *zhè sān bēi de shuǐ*]]
- (32) a. [_{DP} Spec[_{D'} *sān běn shū*]]
 b. * [_{DP} Spec[_{D'} *sān běn de shū*]]
 c. * [_{DP} Spec[_{D'} *zhè sān běn de shū*]]

An anonymous reviewer asks how we can make a distinction between *sān bēi shuǐ* and *sān gè rén* since both of them have a configuration in which the number is a head. We argue that *bēi* and *gè* are different in terms of categories. *Bēi* is a measure word, which modifies mass nouns, while *gè* is an individual classifier, which modifies individual nouns. *Bēi* focuses on the amount or quantity of things denoted by the nouns while *gè* focuses on

^① Since *de* is most frequently used word in modern Chinese, it is necessary to discuss the constructions with *de*. To discuss the constructions with *de* can testify the plausibility of the approaches to NCN constructions.

the internal properties of things or people denoted by the nouns. As a measure word, *bēi* cannot occur covertly. For example, *sān shuǐ* is ungrammatical. In contrast, *gè* can occur covertly or overtly. For example, both *sān rén* ‘three person’ and *sān gè rén* (three CI person, ‘three person’) are grammatical and they have the same meaning. The reason for the difference lies in the fact that the numeral can modify the noun and assign the feature of specificity to the noun when the classifier is absent. In contrast, the numeral cannot assign the feature of specificity to the noun when the measure word occurs covertly, for the noun of this type is characteristic of unsegmentability. Its semantic segmentation and reference cannot be realized unless the measure word is present. As (31a) shows, the classifier *bēi* merges with the numeral *sān* to give rise to the combination *sānbēi*. The combination occupies the position D and modifies the noun *shuǐ* which is in the complement position. In (31b), the numeral *sān* occupies the position D. The classifier behind *sān* is *gè* which occurs covertly. *Bēi* merges with the noun *shuǐ* by means of the functional category *de* to give rise to the NP *bēi de shuǐ*, which occupies the complement position. In this case, *bēi* is not a classifier, but a shortened form of the noun *bēizi*. As a consequence, the complete syntactic structure of (31b) is *sān gè bēizi de shuǐ* (three CI glass AUX water), which means “water of the three glasses”. If the demonstrative occurs in the construction, *sān bēi de shuǐ* will become *zhè sān bēi de shuǐ*, whose meaning is “water of the three glasses”, as shown in (31c). It is self-evident that *bēi* in (31b-c) is not a classifier, but a noun. This is in contrast to *bēi* in (31a). When it comes to (32), (32a) is structurally identical to (31a) and hence its analysis is omitted. The ungrammaticality of (32b) and (32c) lies in the fact that *běn* in the two structures cannot act as a noun, but as a classifier, for both *sān gè běnzi de shū* (three CI notebook AUX book) and *zhè sān gè běnzi de shū* are not grammatical. Compared with the approaches CIP and nP, the approach to classifier constructions that I have proposed can provide a more reasonable account for the differences between classifiers and measure words and describe the different syntactic-semantic functions of the same word in different contexts. Furthermore, it can account for why the noun can precede the numeral and the classifier to give rise to the construction “noun + numeral + classifier”. The noun can move cyclically to the specifier position of DP. This suggests that no demonstrative is allowed to occur in the construction. Otherwise, derivation would crash and ungrammatical constructions would be generated. It is self-evident that the demonstrative may constitute a barrier in the structure to prevent the noun from moving. It follows that the combination “numeral + classifier” is of dual property. To put it differently, it can function as an argument and a predicate. In terms of syntax and noun phrase, the phrase in the middle layer shares the property with the constituents at both ends and preserves its internal structure as well as its own property (Li & Lu Bingfu, 2002).

In the light of Xu Dan & Fu Jingqi (2011), the word order of classifiers falls into three

The Structure of Classifier Constructions and Some Related Theoretical Issues

classes: 1) Dongtai-Miaoyao type, viz. the pattern “numeral + classifier + noun”; 2) Tibeto-Jingpo type, viz. the pattern “noun + classifier + numeral”; 3) Yi-Qiang type, viz. the pattern “noun + numeral + classifier”. Among the three classes, only the languages of the Dongtai-Miaoyao type are identical to Chinese, whereas the languages of the other two types differ from Chinese. Then, how should the differences be accounted for? Or can the approach to classifier constructions that has been proposed in this paper account for the differences? I argue that the internal structure of the NCN construction is $[_{DP} \text{Spec}[_{D'} D[_{NumP} \text{Num-Cl NP}]]]$. The pattern “noun + classifier + numeral” in the languages of the Tibeto-Jingpo type and the pattern “noun + numeral + classifier” in the languages of Yi-Qiang type derive from the movement of the noun. The demonstrative cannot occur in front of the noun and modify it.^①

- | | |
|---|----------------------------------|
| (33) a. $[_{DP} \text{Spec}[_{D'} D[_{NumP} \text{Num-Cl NP}]]]$ | Chinese and Dongtai-Miaoyao type |
| b. $[_{DP} \text{NP}_j [_{D'} D[_{NumP} \text{Cl}_i \text{Num-t}_i \text{t}_j]]]$ | Tibeto-Jingpo type |
| c. $[_{DP} \text{NP}_i [_{D'} D[_{NumP} \text{Num-Cl t}_i]]]$ | Yi-Qiang type |

In reality, the pattern “noun + classifier + numeral” is rare, whereas the pattern “noun + numeral + classifier” is abundant. This is because the derivation of the former involves more constituents than that of the latter, as a consequence of which the former’s derivation is less economical than that of the latter. The pattern “noun + classifier + numeral” involves movement of the noun and the classifier, whereas the pattern “noun + numeral + classifier” involves movement of the noun only. This testifies that $[_{DP} \text{Spec}[_{D'} D[_{NumP} \text{Num-Cl NP}]]]$ is indeed the basic structure of classifier constructions.

Differing from the theta-feature discharge of the lexical category, the head X of the functional category discharges subcategorization feature to its specifier and complement by means of XP (Fukui, 2001). X determines the syntactic representation of YP and ZP and assigns the features of number or reference to YP and ZP respectively.

- (34) *zhè jiān wū=zhè wū*
 a. $[_{DP} \text{Spec}[_{D'} \text{zhèjiān wū}]]$
 b. $[_{DP} \text{Spec}[_{D'} \text{zhè } \emptyset \text{ wū}]]$

- (35) *zhè bēi shuǐ=zhè shuǐ*
 a. $[_{DP} \text{Spec}[_{D'} \text{zhèbēi shuǐ}]]$
 b.[?] $[_{DP} \text{Spec}[_{D'} \text{zhè } \emptyset \text{ shuǐ}]]$

The contrast between (34) and (35) as in (11a) and (11b) shows that the classifier can be omitted, whereas the measure word cannot. The reason for the difference lies in the fact that in the pattern “demonstrative + classifier + noun” the demonstrative can modify the

^① The discussion of the classifiers in the Tibeto-Burman, Dong-Tai, and Miao-Yao languages aims to cross-linguistically testify that the analysis proposed in the paper has the significance of universal linguistic typology. Moreover, it has descriptive and explanatory adequacy.

noun and assign the feature of specificity to the noun when the classifier occurs covertly. In this case, the construction has the implication of oneness, viz., the numeral is *yī* ‘one’. In contrast, in the pattern “demonstrative + measure word + mass noun”, the demonstrative cannot assign the feature of specificity to the noun when the measure word is absent and has no implication of oneness, for the noun of this type is characteristic of unsegmentability. Its semantic segmentation and reference cannot be realized unless the measure word is applied. It follows that it is D that determines the occurrence or non-occurrence of the classifier and its position in the DP structure.

5. Conclusion

Classifiers are obliged elements in Chinese expression of count meanings. In this article, I have offered three contributions to the study of classifiers and classifier constructions in Chinese. First, I have shown that the classifier, as a functional category, cannot be separated from the numeral or the demonstrative and hence it does not function as a head. In effect, the nature of classifier constructions is determined by the numeral or the demonstrative and has nothing to do with the classifier per se. Second, I have shown that besides the function of dividing and dispersing the semantic features of the set denoted by the noun to transform it into individuals which can be counted individually, the classifier in the NCN construction is mainly a linking marker used to connect the constituents preceding and following it, including the constituents with features of [+Num] and [+Def]. It can adjoin to the head. As a consequence, in terms of structural segmentation, the classifier should be segmented with the head, but it is only a clitic of the head, thus contradicting the CIP hypothesis proposed by Tang (1990), Xue Ping & McFetridge (1995), Au Yeung (1997, 2005), Li (1998, 1999), Cheng & Sybesma (1999), Hu Jianhua and Pan Haihua (2000), and Tsai (2003), or the nP analysis proposed by Cheng Gong, Yang Daran & An Fengcun (2015). Third, I have given a comprehensive analysis of the internal structure of classifier constructions in Chinese. In this theory, classifier constructions are analyzed as $[_{DP} ZP[_{D'} D-Cl YP]]$ where it is adjoined to the head and is part of the head. The head is D, which takes the form of demonstratives or numerals. The whole structure bears the feature [+N], which is due to the existence of D, whether it is overt or covert. It follows that the structure of noun phrases is universal, regardless of the occurrence or non-occurrence of overt classifiers in a language.

Abbreviations and symbols

∅	Null Constituent	Cl	Classifier
AGR	Agreement	Cl'	Intermediate Projection of the Classifier
AUX	Auxiliary Word	CIP	Classifier Phrase

The Structure of Classifier Constructions and Some Related Theoretical Issues

D	Determiner	Num	Numeral
D'	Intermediate Projection of the Determiner	Num'	Intermediate Projection of the Numeral
Def	Definite	NumP	Numeral Phrase
DP	Determiner Phrase	Spec	Specifier
EPP	Extended Projection Principle	t	Trace
n	Light Noun	X'	Intermediate Projection of X
NCN	Numeral Classifier Noun	XP	X phrase
nP	Projection of the Light Noun	YP	Y phrase
NP	Noun Phrase	ZP	Z phrase

References

- Abney, S. P. 1987. *The English Noun Phrase in Its Sentential Aspects* [D]. Doctoral Dissertation. Cambridge, MA: MIT.
- An Fengcun & Cheng Gong. 2014. A Study on Syntactic Function of Chinese Classifiers from the Generative Perspective [J]. *Journal of PLA University of Foreign Languages*, (3):51-58.
- An Fengcun & Cheng Gong. 2015. A Study on Linguistic and Cognitive Factors of Classifiers' Creation from Aspect of the Evolution of Chinese Count Structure [J]. *Journal of Yanbian University*, (1):103-110.
- Au Yeung, B. W-H. 1997. A Parametric Analysis of Cantonese and Mandarin Nominals [A]. *Proceedings of the Postgraduate Research Forum on Language & Linguistics* [C]. Hong Kong: City University of Hong Kong, 7:186-197.
- Au Yeung, B. W-H. 2005. *An Interface Program for Parameterization of Classifiers in Chinese* [D]. Doctoral Dissertation. Hong Kong: The Hong Kong University of Science and Technology.
- Chen Lianjun. 2005. The Distributive Features of the Classifiers in Juyanhanjian [J]. *Journal of Ili Teachers College*, (1):68-72.
- Cheng Gong, Yang Daran & An Fengcun. 2015. Unified Analysis of Classifier Constructions and Pseudo-partitive Constructions [J]. *Contemporary Linguistics*, (1):56-70.
- Cheng, L-S. L. & R. Sybesma. 1999. Bare and Not-so-bare Nouns and the Structure of NP [J]. *Linguistic Inquiry*, 30(4):509-542.
- Chomsky, N. 1995. *The Minimalist Program* [M]. Cambridge, MA: The MIT Press.
- Fukui, N. 1986. *A Theory of Category Projection and Its Applications* [D]. Doctoral Dissertation. Cambridge, MA: MIT.
- Fukui, N. 2001. Phrase Structure [A]. In M. Baltin & C. Collins (eds.). *The Handbook of Contemporary Syntactic Theory* [C]. Oxford: Blackwell, 374-406.
- Gao Mingkai. 1996. *On Chinese Grammar* [M]. Beijing: The Commercial Press.
- Gao Qian. 1993. Chinese NP Structure [A]. In C. Pollard & A. Kathol (eds.). *Ohio State University Working Papers in Linguistics* [C]. Columbus: Ohio State University, 42:88-116.
- Hawkins, J. A. 1995. *A Performance Theory of Order and Constituency* [M]. Cambridge: Cambridge University Press.
- He Xiaowei & Cai Jilang. 2015. A Feature Decomposition Analysis of Classifiers [J]. *Contemporary Linguistics*, (1):71-84.
- Hu Jianhua & Pan Haihua. 2000. *Deriving the Subject-object Symmetry in Topicalization* [R]. Presented at The International Symposium on Topic and Focus, Hong Kong.
- Hu Fu. 1984. *Numerals and Classifiers* [M]. Shanghai: Shanghai Education Press.
- Huang Borong & Liao Xudong. 2002. *Modern Chinese* [M]. Beijing: Higher Education Press.
- Huang Ping. 2012. *A Study of the Word Orders of Numerically Quantified Noun Phrases in Sino-Tibetan Languages* [D]. Doctoral Dissertation. Beijing: Minzu University of China.
- Jiang Li. 2012. *Nominal Argument and Language Variation* [D]. Doctoral Dissertation. Cambridge, MA: Harvard University.
- Jiang Ying. 2005. Three Mechanisms of Chinese Noun Classifiers [J]. *Journal of Yunnan Normal University*, (1):39-43.

Yang Yongzhong

- Li Ruohui. 2000. A Probe into Classifiers in the Yin Dynasty [J]. *Research in Ancient Chinese Language*, (2):79-84.
- Li Y-H. A. 1998. Argument Determiner Phrases and Number Phrases [J]. *Linguistic Inquiry*, 29(4): 693-702.
- Li Y-H. A. 1999. Plurality in a Classifier Language [J]. *Journal of East Asian Linguistics*, 8(1):75-99.
- Li Y-H. A. 2007. The Theory of Empty Categories and the Identification of Empty Categories in Chinese [J]. *Linguistic Sciences*, (2):37-47.
- Li Y-H. A. & Lu Bingfu. 2002. On the Number Phrase “Number + Classifier + Noun” [J]. *Studies of the Chinese Language*, (4):326-336.
- Li Xuping. 2013. *Numeral Classifiers in Chinese* [M]. Berlin: De Gruyter Mouton.
- Lü Shuxiang (ed.). 1981. *800 Words in Modern Chinese* [M]. Beijing: The Commercial Press.
- Lü Shuxiang & Zhu Dexi. 1953. *Lectures on Grammar and Rhetoric* [M]. Beijing: China Youth Publishing Group.
- Ma Qingzhu. 1998. *The Categories of Chinese Semantics and Grammar* [M]. Beijing: Beijing Language and Culture University Press.
- Ouhalla, J. 1991. *Functional Categories and Parametric Variation* [M]. London: Routledge.
- Radford, A. 2001. *Syntax: A Minimalist Introduction* [M]. Cambridge: Cambridge University Press.
- Rao Hongquan. 2012. Nature of Classifiers and Head of Quantity Expression [J]. *Journal of Anhui Normal University*, (1):113-119.
- Shi Jian. 2009. *A Reference Grammar of Lianghe Achang Language* [M]. Beijing: China Social Sciences Press.
- Tang C-C. J. 1990. A Note on the DP Analysis of the Chinese Noun Phrases [J]. *Linguistics*, 28:337-354.
- Tsai W-T. D. 2003. Three Types of Existential Quantification in Chinese [A]. In Y-H. A. Li & A. Simpson (eds.). *Form, Interpretation and Functional Structure: Perspectives from Asian Languages* [C]. London: Routledge Curzon, 161-179.
- Wu Yicheng & A. Bodomo. 2009. Classifiers ≠ Determiners [J]. *Linguistic Inquiry*, 40(3):487-503.
- Xu Dan & Fu Jingqi. 2011. Classifiers and Some Typological Considerations [J]. *Linguistic Sciences*, (6): 561-573.
- Xu Jie. 2007. A Comparative Study of Categories in Generative Grammar and Word Classes in Traditional Grammar [A]. *Duiwai Hanyu Yanjiu* [C], Beijing: Commercial Press, (3):142-155.
- Xu Xianming. 2007. *Hani Language Discourse Analysis* [M]. Victoria: La Trobe University Press.
- Xue Ping & P. McFetridge. 1995. DP Structure, HPSG and the Chinese NP [A]. *Proceedings of the 14th Annual Conference of Canadian Linguistic Association* [C], 1-15.
- Yang Yongzhong. 2008. The Syntactic Status of Expletive *de* and Some Related Theoretical Issues [J]. *Chinese Linguistics*, (3):51-63.
- Yang Yongzhong. 2010. A Reanalysis of *de* and *de* Construction [J]. *Journal of Foreign Languages*, (5): 30-40.
- Yang Yongzhong. 2014. The Syntactic Status of *de* and the Internal Structure of *de* Constructions in Chinese [J]. *Language Research*, (1):121-157.
- Yang Yongzhong. 2017. Revisiting Classifiers and Classifier Constructions [J]. *Journal of Foreign Languages*, (4):34-43.
- Yang Yongzhong. 2018. The Syntactic Status of Classifiers [J]. *Journal of Guangdong University of Foreign Studies*, 29(3):36-44.
- Yang Yongzhong. 2019. On the Nature of Classifiers and Classifier Constructions [J]. *Journal of Zhejiang International Studies University*, (4):45-55.
- Yang Yongzhong. 2021. A Generative Approach to Classifier Constructions [J]. *Foreign Languages and Translation*, 28(1):18-25.
- Zhang Yisheng. 2003. From a Measure Word to an Auxiliary Word: A case study of the grammaticalization of the Chinese measure word *ge* [J]. *Contemporary Linguistics*, (3):193-205.
- Zhu Dexi. 1982. *Lectures on Grammar* [M]. Beijing: The Commercial Press.
- Zong Shouyun. 2011. The Path and Motivation of Classifiers' Categorization [J]. *Journal of Shanghai Normal University*, (3):109-116.