Discussion note

De and the Functional Expansion of Classifiers

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This note tries to clarify an empirical issue: whether the association marker de in Mandarin Chinese is a numeral classifier. There are important syntactic contrasts between de and numeral classifiers. The former may not follow a numeral, occur at the left-edge of a nominal, follow a demonstrative immediately, be reduplicated, but a numeral classifier may do all of these. Moreover, de may follow an adjective, a clause, a pronoun, or a proper name, but a numeral classifier never does so. Furthermore, de and a numeral classifier can surface next to each other, indicating their different syntactic positions. We conclude that the two kinds of formatives are syntactically different.

Key words: de, classifier, Mandarin Chinese, modifier, Major Constituent

1. Introduction

This note presents a critical response to Cheng & Sybesma’s (2009) conjecture that in Mandarin Chinese, a numeral classifier (CL) language, the functional particle de, which usually follows a modifier, is a CL. I will call this analysis CL-Analysis of DE (CLAD, henceforth). The CLAD is also proposed in Aboh et al. (2011).

In this section, I present some reasonable doubts on the arguments for the CLAD. More differences between de and CLs are discussed in §2. Finally, I give some general comments on the CLAD in §3.

The CLAD first shows that like a CL, de licenses the ellipsis of NPs, as seen in (1) (Cheng & Sybesma 2009:131, Aboh et al. 2011:5): ¹

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(1) a. Ta chi-le yi ge pingguo, ni ye chi-le yi ge pingguo.
   3SG eat-PRF one CL apple 2SG also eat-PRF one CL apple
   ‘He ate one apple, and you also ate one.’

   b. Wo xihuan hong-se de xie, ta xihuan hei-se de xie.
   1SG like red-color DE shoe 3SG like black-color DE shoe
   ‘I like red shoes, and he likes black ones.’

But such data may simply show that *de* is a head element. Other head elements may also license NP ellipsis. In (2), *shi* ‘be’ licenses the ellipsis of the NP *xuesheng* ‘student’, but obviously, it is not a CL of any type.

(2) Ta shi xuesheng, ni ye shi xuesheng.
   3SG be student 2SG also be student
   ‘He is a student, and so are you.’

Second, noticing that all CLs in Mandarin Chinese may immediately follow a numeral but *de* may never do so, the CLAD claims that *de* is a special type of CL. “It is a classifier of the type that marks out the individual instantiation of what the noun denotes” (Cheng & Sybesma 2009:124). It is claimed that the function of such a CL is to “mark count nouns as count” (Cheng & Sybesma 2009:134). But in data like (3), where *de* occurs with a mass noun, it is not clear how *de* marks any count meaning, or marks any portion of the mass as a unit (cf. Cheng & Sybesma 2009:152, fn.6).

(3) a. suowei de tang b. jia de tang c. qizhong de tang
   alleged DE soup fake DE soup in DE soup
   ‘so-called soup’ ‘fake soup’ ‘the soup inside’

Third, the CLAD (Cheng & Sybesma 2009:134) introduces the following Thai examples, to show that the modification marker *thīi* in (4a) can be replaced by the CL *khan* in (4b). It is conjectured that *de*, as a modification marker in Mandarin Chinese, is a CL.

(4) a. rôm thīi jāj sāam khan nán
   umbrella THĪI big three CL that
   ‘those three big umbrellas’

   b. rôm khan jāj sāam khan nán
   umbrella CL big three CL that
   ‘those three big umbrellas’
The use of CLs in examples like (4b) and many other uses of CLs in Thai are discussed in Haas (1942:203). The fact that CLs in many languages have functional expansion has been studied in Bisang (1999). Some of the extended uses of CLs in certain Southeast Asian languages are listed in (5). (See Bisang 2011:7.)

<table>
<thead>
<tr>
<th></th>
<th>Thai</th>
<th>Hmong</th>
<th>Weining Ahmao</th>
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<tbody>
<tr>
<td>occurrence with numerals</td>
<td>+</td>
<td>+</td>
<td>+</td>
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<tr>
<td>marking of possession</td>
<td>–</td>
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<tr>
<td>definiteness/specificity</td>
<td>(+)</td>
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<td>+</td>
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<td>contrative focus (with Adj, Dem)</td>
<td>+</td>
<td>–</td>
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<tr>
<td>singulative (in [N CL Dem])</td>
<td>+</td>
<td>–</td>
<td>–</td>
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<tr>
<td>size (augmentative, diminutive)</td>
<td>–</td>
<td>–</td>
<td>+</td>
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<tr>
<td>gender of speaker/politeness</td>
<td>–</td>
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From (5) we can see that the additional CL *khan* in (4b) may be either a definiteness/specificity marker or a contrastive focus marker, two possible extended uses of CLs in Thai, according to Bisang’s research.

The fact that a CL can be licensed by an adjective, instead of a numeral, is also seen in Taiwanese (Liu 2010) (the final *king* in (6)), as well as in Thai (Haas 1942:203, Jenks 2011:198) (*lûuk* in (7b)). Such constructions are not for counting.

(6) Tsit king tshu tsin tua-king. [Taiwanese]
    this CL house very big-CL
    ‘This house is very big.’

(7) a. thúrian sāam lûuk
    durian three CL
    ‘(the) three durians’

b. thúrian lûuk thîi mĕn
    durian CL THĪI stinky
    ‘the durian that is smelly’

In Shaowu and some other Chinese dialects, a CL may precede another CL to encode the meaning of ‘one’, as in (8b) (Ngai 2011). In the two examples in (8), [kâi213] and [kâi21] are the same morpheme with different tonal realizations in the given tone sandhi domains.

(8) a. çi21 kâi213 nin22
    one CL person
    ‘one person’

b. kâi21 păn55 cy21
    CL CL book
    ‘one book’
As we know, the basic function of a numeral CL is to encode a counting unit. The table in (5) shows that CLs in the listed languages may be used beyond counting, but their occurrence with numerals, for counting, is still the basic function. That is why Bisang (1999:114) uses the expression “functional expansion” to address the issue. In (6), the first occurrence of the CL *king*, with an implicit one-denoting numeral, is for counting and the second one is an extended use. Similarly, the CL *liu* is for counting in (7a) and an extended use in (7b). In the Shaowu examples in (8), *kai* is for counting in (8a) but it is not a counting unit in (8b). If *de* in Mandarin Chinese never occurs with a numeral, it does not have the basic function of a CL in the language. It is confusing to label *de* as a CL because its function and a non-basic function of a CL in another language are the same.

2. More differences between *de* and classifiers

In the previous section, we have shown that the arguments for the CLAD are not convincing. In addition to the fact the *de* does not occur with a numeral, the following facts further show that the distributions of *de* are different from those of a CL.

First, a CL in Mandarin Chinese can surface at the left edge of an indefinite nominal, as seen in (9a), whereas *de* may never do so, as shown in (9b).

(9) a. Wo xiang chi [ge pingguo].
I want eat CL apple
‘I want to eat an apple.’

b. *Wo xiang chi [de pingguo].
I want eat DE apple
Intended: ‘I want to eat an apple.’

Second, a CL in Mandarin Chinese can surface to the immediate right of a demonstrative, as shown in (10a), whereas *de* may never do so, as shown in (10b).

(10) a. Wo xiang chi zhe ge pingguo.
I want eat this CL apple
‘I want to eat this apple.’

b. *Wo xiang chi zhe de pingguo.
I want eat this DE apple

Third, if we consider extended uses of CLs in Mandarin Chinese, we see that CLs
can be reduplicated to denote a kind of plural unit (see e.g. Yang 2005, among others), as seen in (11a), but *de* may not be reduplicated, as seen in (11b).

Mali BA one CL-CL leaf pick-PRF-up  
‘Mali picked every leaf.’

b. *... de-de shuye  
... DE-DE leaf

But fourth, on the other hand, the distributions of *de* are not shared by CLs. For instance, *de* may follow an adjective (in (3) and (12a)), or a clause (in (12b)), or a pronoun (in (12c)), or a proper name (in (12d)), but a CL never does so, as seen in (13).

(12) a. kuaile de haizi  
happy DE kid  
‘happy kid’

b. Mali qushi de xiaoxi  
Mali die DE news  
‘the news that Mali died’

c. wo de wenti  
I DE problem  
‘my problem’

d. Mali de erzi  
Mali DE son  
‘Mali’s son’

(13) a. *kuaile ge haizi  
happy CL kid  
‘happy kid’

b. *Mali qushi ge xiaoxi  
Mali die CL news  
‘the news that Mali died’

c. *wo ge wenti  
I CL problem  
‘my problem’

d. *Mali ge erzi  
Mali CL son  
‘Mali’s son’

Fifth, *de* and a CL can surface next to each other, as shown in (14) (Her & Hsieh 2010:541, Li 2011:40). In such examples, the CLAD would, implausibly, expect both *de* and the CL to mark count nouns as count. Importantly, when the two are next to each other, the order is fixed: *de* precedes the CL (see the acceptability contrast between (14) and (15)). The fixed order also indicates that the two elements have different syntactic positions.

(14) a. yi da ke de gaolicai  
one big CL DE cabbage  
‘one big cabbage’

b. yi da tiao de yu  
one big CL DE fish  
‘one big fish’
c. 1/3 li de ganmao-yao
   1/3 CL DE cold-pill
   ‘1/3 of a cold pill’

(15) a. *yi da de ke gaolicai
   one big DE CL cabbage
b. *yi da de tiao yu
   one big DE CL fish
c. *1/3 de li ganmao-yao
   1/3 DE CL cold-pill

The above discussion shows that first, *de* does not have the basic function of a CL in a numeral CL language, i.e. to occur with a numeral in order to encode a counting unit; and second, in Mandarin Chinese, *de* does not show the distributions of either the basic or the extended uses of CLs in the language.

3. Further comments on the classifier analysis of *de*

We now briefly address the issues of the possible extended uses of CLs and the possible status of *de*, if it is not a CL.

For the head of a functional projection, it can be realized by various forms. One can assume that in the structure of (4), there is a functional projection to host the modifier *jàj ‘big’, and the head of the projection is realized as *thii* in (4a) and as a copy of the CL *khan* in (4b). Importantly, such a flexibility of the realization of the functional head does not lead us to believe that *de* in Mandarin Chinese is a CL.

For functional elements, not all of them have a strict one-to-one mapping between a morphological form and a syntactic position. The syntactic function of a functional element may vary, depending on its syntagmatic relation with other elements in the context. In Japanese, the functional element *yori* may either introduce a standard in a comparative construction, as in (16a), or introduce a location, functioning as a directional postposition, as in (16b) (Bhatt & Takahashi 2011:606-607).

(16) a. Taroo-wa Hanako-yori kasikoi.
   Taro-TOP Hanako-than smart
   ‘Taro is smarter than Hanako.’
b. Watasi-wa Tokyo-yori mairimasita.
   1SG-TOP Tokyo-from came
   ‘I came from Tokyo.’
Chinese preposition *cong* ‘from’ has the same function as *yori* in (16b). But the comparative marker function of *yori* in (16a) does not indicate that *cong* is also a comparative marker in Mandarin Chinese. Many lexical elements (root forms) have multiple functions. For instance, the color adjective *white* is gradable in general, but non-gradable when it is used as a classifying modifier, as in *I prefer white wine*. For bound forms, we have polyfunctionality of affixes (e.g. *-er* denotes an agent in *writer* but an instrument in *open-er*). It is natural that a functional form may also have multiple syntactic functions. This is a syntactic position-oriented approach to functional elements. Like other kinds of functional elements, CLs can be realizations of various functional heads. Importantly, such a flexibility of the roles of functional elements does not lead us to believe that *de* in Mandarin Chinese is a CL.

As for *de*, although the goal of this note is not to establish its syntactic or semantic status, it needs to be pointed out that alternative analyses of *de* which do not have the problems of the CLAD are available and more plausible.

The *de* in examples like (1b) is called associative marker in Li & Thompson (1981). We first exclude a few implausible analyses of this particle. First, unlike a D element, *de* does not introduce any definiteness or specificity effect, and it must integrate two phrases together. No D element is required to occur with another phrase (e.g. a modifier), in addition to an NP. Therefore, *de* is unlikely to be a D element (cf. Simpson 2001, 2002). Note that it is possible for an element to have a different syntactic status in an old system. For instance, the verbal use of *jiang* in Classical Chinese is lost in the modern system, and thus the preverbal temporal marker *jiang* is not a verb or bleached verb now. Second, while the string to the right of *de* may be stranded, as seen in (1b), the string to the right of a conjunction may not be stranded, and therefore, *de* does not look like a conjunction, either (cf. Li 2007). Third, since *de* may also introduce a non-predicative element, as seen in (3a), it cannot be a formative for predication. *De* is analyzed as a linker in den Dikken (2006), which correlates with predicate raising. In Cheng & Sybesma (2005:74), *de* is analyzed as a lambda operator, which bears the predicate feature [A], in the sense of Adger & Ramchand (2005). If *de* may occur in the absence of a predication relation, its general function cannot be a predication marker. A non-predicate adjective is not a reduced clause, and thus the complementizer analysis of *de* is also ruled out. Fourth, *de* may introduce an argument to a noun, it therefore cannot be a mere modification marker. In (12d), *de* introduces the external argument *Mali* to saturate the predicate of the relational noun *erzi* ‘son’. Similarly, in (17b), *de* introduces the external argument *Mali* to saturate the predicate of the noun *guanxin* ‘concern’. In

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2 We do not discuss other uses of *de*, such as in resultative and the *shi…de* ‘be…DE’ constructions. The CLAD does not claim that *de* in these uses is also a CL. We assume that *de* in such constructions is different from the associative marker discussed here.
(12b), *de* introduces the complement *Mali qushi* ‘Mary died’ to the noun *xiaoxi* ‘news’, and similarly in (17c), *de* introduces the internal argument *dui jushi* ‘to situation’ to the noun *guanxin* ‘concern’.

(17) a. Mali guanxin jushi.
   Mali concern situation
   ‘Mali concerns the situation.’
b. Mali de guanxi
   Mali DE concern
   ‘Mali’s concern’
c. dui jushi de guanxin
   to situation DE concern
   ‘the concern about the situation’

The syntactic contrasts between modifiers and arguments have been attested in many aspects (Lebeaux 1988, 1991, Chomsky 1993, 2004, Rizzi 2004, among many others) (e.g. the reconstruction effects in binding; the argument-modifier contrasts have brought people to explore the syntactic operation “Late Merge”, in addition to Merge and Remerge). Since *de* may introduce an argument to a noun, its functions are more than that of a modification marker.

General properties of *de* include the following. First, it occurs between two phrasal elements (Fan 1958, Huang 1989, Tang 1990:420, among others). This property reminds us of the so-called EPP or Edge feature (e.g. Chomsky 1995, 2008). The feature is defined as the obligatory availability of two phrases for certain functional heads, e.g. INFL and wh-question Q in English. The property itself indicates that *de* is a functional element.

Second, the whole *de*-complex satisfies the c-selection of any element that selects a nominal, although the two phrases linked by *de* may not be nominal in other contexts. The word *guanxin* ‘concern’ is a verb in (17a), but when it follows *de*, as in (17b) and (17c), the whole complex is a nominal. In (12b), *Mali qushi* ‘Mary died’, which precedes *de*, is a clause, but the whole complex is again a nominal. *De* is obligatory in nominalization constructions. In (17a), for instance, there is no *de* in the clause. In (18), however, the bracketed constituent following the causer marker *ba* is a nominalized complex, and *de* must occur between the constituents of the complex. Thus *de* seems to be responsible for the nominal category of the whole complex.
As we mentioned above, Li & Thompson call de an associative marker, since it occurs between two elements that have a certain semantic relationship. We can identify the relationship as a Major Constituent relationship. A Major Constituent is the modifier, complement, or subject of a certain element (Hankamer 1973:18). Its existence has been attested in various constructions. For instance, the remnants of a gapping operation must be Major Constituents (Hankamer 1973:18, Neijt 1979:40, 111). So the third general property of de is that it introduces a Major Constituent to the element to its right.

Fourth, since the formation of complex phrases is recursive, de occurs whenever a new Major Constituent is integrated into the structure. When two or more instances of de occur, only the lowest one can be optional at the PF. The example in (19) demonstrates this.

(19) [suowei de [Mali de [dui jushi de [miqie (de) [guanxin]]]]]
so-called DE Mali DE to situation DE close DE concern
‘the so-called Mali’s close concern of the situation’

Other kinds of functional elements are also found to appear on more than one element within the same complex nominal. For instance, gender and number agreement markers occur on both definite articles and adjectives in French and many other languages, as seen in (20a). Determiners may occur with each modifier in Greek (Androutsopoulou 1994), Albanian, and Hebrew, as seen in (20b). Case is also marked on each element of a nominal in Greek, as seen in (20c) (Alexiadou 2001:224).

(20) a. la belle fille [French]
the.F.SG pretty.F.SG girl.F.SG
‘the pretty girl’

b. to megálo to kókkino to vivlío [Greek]
the big the red the book
‘the big red book’

c. tón amerikanik-ôn ginek-ôn [Greek]
the-F.PL.GEN American-F.PL.GEN woman-F.PL.GEN
‘of the American women’
The above four general properties suggest one possible analysis of *de*: it introduces a Major Constituent and projects the nominal categorial features for the whole phrasal complex. Regarding the former function, since the notion of Major Constituent is independently defined in the syntactic theory, it is our observation that *de* always follows such a constituent in a nominal. A parallel situation is seen, for example, in gender markers. Since the feminine feature is clearly defined, if a formative may occur with any feminine nominal but never occurs with a non-feminine nominal, it is plausible to claim that the formative is a feminine marker. As for the latter function of *de*, it is possible that *de* is one kind of realization of the little *n*, providing nominal features to the whole complex (an early exploration of this possibility is seen in Zhang 1999). Pure categorizers like this have been attested in other languages, e.g. the Halkomelem nominalizer *s-* (Wiltschko 2012). But an elaboration of this possibility is beyond this short note.

We conclude that *de*, which never follows a numeral, is syntactically different from a CL in Mandarin Chinese.
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References


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“的”與量詞功能的多樣性

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華語名詞性短語中的功能詞“的”是否等同於數量結構中的量詞？針對這一問題，這篇筆記整理了兩者在結構特點上的差異，包括“的”不後附於數詞、不出現在名詞性成分的左緣、不緊跟在指示詞後面，而量詞則都可以；而且“的”無重疊式，但量詞有。另外，“的”可緊跟在形容詞、子句、人稱代詞，以及專有名詞之後，但量詞則不可。此外，量詞跟“的”也可一前一後緊相隨，這更說明兩者句法地位不同。

關鍵詞：的，量詞，華語，修飾成分，顯要成分