

# XuPing Li: Numeral Classifiers in Chinese: the syntax-semantics interface (review)

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## 1. Introduction

This book analyzes the syntax and semantics of Chinese (mostly Mandarin, but also Cantonese and Wu) numeral Classifiers. The primary aim is to „provide the missing semantic component in previous syntactically oriented works” (p. 1).

The book consists of nine substantive chapters organized into three parts (plus an introduction). Part I (ch. 2-5) addresses the question of whether there is a lexical count/mass distinction among nouns in Mandarin, and concludes that all Mandarin nouns are mass nouns. Part II (ch. 6-8) argues that classifiers cannot be divided into two lexical groups, count (aka sortal or individual) and mass (aka non-individual) classifiers. Instead, it is more appropriate to talk about a 'counting function' and a 'measuring function' of classifiers. Part III (ch. 9-10) analyzes the definite reading of Chinese nominal phrases containing classifiers, and argues that these languages project a DP on the definite interpretation of the noun phrase.

## 2. Synopsis

Chapter 2 (Defining classifiers) defines numeral classifiers as mediating elements that syntactically occur contiguous to noun-modifying numerals and determiners (Num-Cl-N or Det-Cl-N), and semantically provide counting or measuring units. This definition subsumes individual classifiers (*two Cl tree*), group classifiers (*a bundle of straws*), partition classifiers (*a piece of cake*), container classifiers (*a bottle of wine*), temporary classifiers (*a bodyful of snow*), standard measures (*five meters of cloth*) as well as kind classifiers (*this kind of animal*). Li argues against treating classifiers as ordinary nouns in Chinese. He argues that Chinese classifiers are functional elements. English classifiers (*a head of cabbage*, *a herd of animals*, *all kinds of flowers*, *one liter of wine*), on the other hand, are argued to be regular nouns rather than genuine classifiers of the Chinese type.

Chapter 3 (The count/mass distinction in Chinese revisited) is a thorough critical assessment of the claims of Cheng and Sybesma (1998), henceforth C&S. C&S argue that Chinese classifiers fall into two groups: count and mass classifiers (cf. English *a head of cabbage* vs. *a box of cabbage*). Count classifiers are functional elements generated in the Cl head, while mass classifiers are lexical elements undergoing N-to-Cl movement. C&S use two diagnostics to differentiate between count and mass classifiers. First, they suggest that suggest that adjectives like *da/xiao* 'big/small' may only precede mass classifiers. Li shows that such adjectives may also precede count classifiers. Second, C&S claim that the particle *de* can follow only mass classifiers. Li shows that not all mass classifiers are

compatible with *de* (e.g., group and partition classifiers), and sometimes count classifiers can also be followed by *de*.

In Chapter 4 (Natural atomicity) Li argues against the view of Doetjes (1997) and Cheng et al. (2008) that Chinese has a mass/count distinction at the level of nouns. Doetjes (1997) suggests that only nouns that have inherent minimal parts can go with the general Classifier *ge* and the group classifiers *dozen* and *flock*, so compatibility with these classifiers is a diagnostics for differentiating between count and mass nouns. Li argues that these are not reliable diagnostics. He proposes that countability is a grammatical notion: nouns that can combine with numerals directly are count nouns, while nouns that need a classifier in order to be counted are mass nouns. Based on this criterion, all Chinese nouns are mass nouns. Individuation, as opposed to countability, is an ontological notion: nouns can be discrete or homogenous at the ontological level. That Mandarin bare nouns have both an individual and a stuff reading stems from genuine ambiguity at the ontological level.

Chapter 5 (Chinese bare nouns) defends the Krifka-Chierchia hypothesis that Chinese bare nouns are mass nouns and denote kinds by default. Li shows that bare nouns appear as arguments of kind-level predicates (eg. *extinct*) and in a postcopular position they function as kind-level predicates themselves. Further evidence for the Krifka-Chierchia hypothesis comes from the fact that bare nouns can take kind classifier phrases as appositive modifiers (lit. *whale, this kind animal*), and that their scope behaviour is different from that of genuine indefinites. It is proposed that the object-level readings of Chinese bare nouns (both on the indefinite and the definite interpretations) are derived from the kind interpretations. The kind interpretation may be turned into a predicative interpretation by type-shifting. When the predicative interpretation derived this way is intersected with another, contextually determined predicate that expresses familiarity, then bare nouns obtain a definite reading.

The heart of the book is Chapter 6 (Counting and measure functions of classifiers), which proposes that the basic distinction in the Chinese classifier system is the distinction between the counting use and the measure use of classifiers. These uses can be teased apart by syntactic tests. Bare Cl+N phrases and reduplicated classifiers allow only the counting interpretation, while Cl-*duo*‘more’-N and Num-Cl-*de*-N allow only the measure reading. Following Rothstein (2009), Li suggests that the structure of the counting reading is [NumP Num [ClP Cl N]], while the structure of the measure reading is [NP [ClP Num Cl] N]. It is suggested that classifiers are characterized by two features:  $\pm$  C(ounting) and  $\pm$  M(easure). Individual (a.k.a. sortal) Cls are +C -M. They have the counting reading by default, but it is shown that they can be coerced into the measure interpretation under the right conditions. Standard measures (eg. *pound*) are -C +M Cls, but they can be coerced into a count reading in the appropriate context. Container, group, and partition classifiers are +C and +M, and they naturally occur in both counting and measure functions. Finally, kind Cls are -C and -M; as they denote predicates of subkinds rather than individuals, they can be used neither for counting individuals nor for measuring quantities.

Adjectives flanked by numerals and classifiers (Num-Adj-Cl-N) are scrutinized in Chapter 7 (Adjectival modification in classifier phrases: pre-classifier adjectives). In this position only dimensional adjectives like *big* and *small* may occur, and they have a special meaning: they are expressives in the sense of Potts (2007) and Schlenker (2007). That is, *yi da ge xigua* (one big Cl watermelon) does not mean that the melon is big. The melon could be small, but i) it is a big quantity for a given eater in view of their consumption

ability, or ii), it is big for the container it is in, or iii) it is significant or has high value in a given context. Pre-classifier adjectives are possible only in counting contexts. Li argues that these adjectives sit in spec, ClP and modify the CL+N constituent. As Cl and N do not form a constituent on the measure reading, this reading does not accommodate such adjectives.

The modification marker *de*, whose function is to make or mark predicate modifiers, is the topic of Chapter 8 (Modification marker *de* in classifier phrases). Li shows that *de* can follow both non-individual and individual classifiers, and argues that it appears with a measure reading in both cases. This is because *de* takes a Num+Cl constituent as its complement, and such a constituent is found in the measure structure but not in the counting structure.

Chapter 9 (Definite classifiers in southern Chinese languages) accounts for the use of classifiers without numerals (bare Cl+N) in Mandarin, Cantonese, and Wu. On the indefinite reading Cl+N is argued to be a ClP without a NumP or DP being projected. Cl+N is predicative; the indefinite reading arises as a result of existential closure over the VP. On the definite reading, on the other hand, Cl+N is argued to project up to DP, with the Classifier undergoing Cl-to-D movement. Definiteness in Chinese is shown to correspond to Roberts' (2003) weak definiteness, i.e. familiarity rather than uniqueness. This interpretation arises when the predicate interpretation of Cl+N undergoes existential Closure and a weak familiarity condition.

Wu definite classifiers (Cl+N on the definite reading) modified by adjectives, relative clauses, possessors, and demonstratives are treated in Chapter 10 (Definite classifiers and their modifiers). Of the examined modifiers, demonstratives are linearly closest to the classifier, and unlike the other modifiers, they cannot take the modification marker *kə* (the equivalent of Mandarin *de*). Li proposes that demonstratives sit in the specifier of DP, and on the definite reading the classifier raises higher than Num, possibly to D. Adjectives and relative clauses must, while possessors may take the *kə* marker, and they are on the left edge of the DP preceding both demonstratives and classifiers. Li argues that these adjectives, relative clauses, and possessors are DP modifiers.

## 3. Evaluation

### 3.1. The book's main merits

Li's goal is to „provide the missing semantic component in previous syntactically oriented works” (p. 1). There is no doubt that the book achieves this goal. The author's own proposals are presented from chapter 5 onwards. Each begins with a syntactic analysis, and ends with a formal semantic analysis that builds on the results of the syntactic discussion. The result is a valuable contribution to the semantic literature on bare nouns and classifiers in Chinese (especially so because as Li points out, apart from Krifka (1995) and the present book, there is no explicit discussion of the semantics of Chinese classifiers). The book, however, does much more than what it sets out to do in the above quote. It also provides careful syntactic analyses of bare nouns, classifiers, definite noun phrases, and NP-modifiers, among others. It is rare to see syntactic discussion and semantic discussion go hand in hand in such a balanced way as in this book, and Li's work will be useful for both syntacticians and semanticists interested in or working on nominal expressions in the Chinese languages.

To my mind, the book has three main strengths. The first is the complementation of the syntactic proposals with semantic structures throughout the volume. The second is the critical evaluation of the existing literature on Ns and Cls in Chinese. Doetjes (1997) and Cheng and Sybesma (1998) have been very influential, and DP-researchers who are not native speakers of Mandarin or other Chinese languages often cite them and base their own analyses on the data and diagnostics in these influential works. Li systematically shows where their generalizations and diagnostics fail, and proposes new empirical generalizations and diagnostics instead. The third strength is the detailed empirical justification of the Krifka-Chierchia hypothesis. The Krifka-Chierchia hypothesis holds that „Chinese bare nouns are mass expressions that denote kinds as default” (p. 88). This hypothesis has been very significant in the literature, but has not been argued for in depth on the basis of empirical data. Chapter 5 of the book provides this missing argumentation.

### 3.2. Some questions and problems

Notwithstanding all these merits, there are a few questions and problems that the analyses raise at specific points. One such question is the syntactic representation of kind classifiers. Chapter 6 argues that +C -M classifiers (roughly corresponding to individual Cls) are used in counting contexts by default, and hence the default structure associated with them is  $[_{NumP} \text{Num} [_{ClP} \text{Cl} [_{NP} \text{N} ]]]$  (though they may have a measure reading and concomitantly a different structure in the appropriate contexts). +C +M classifiers (container, group, and partition classifiers), on the other hand, are used equally easily in both counting and measure contexts, and the structure associated with them in the measure reading is  $[_{NP} [_{ClP} \text{NUM Cl}] \text{N}]$ . Kind classifiers, on the other hand, are argued to be -C -M classifiers, as they „neither count nor measure individuals” (p. 151). One wonders, then what sort of syntactic structure they are associated with.  $[_{NumP} \text{Num} [_{ClP} \text{Cl} [_{NP} \text{N} ]]]$  is strictly for the counting reading, which kind Cls don’t have, and  $[_{NP} [_{ClP} \text{NUM Cl}] \text{N}]$  is strictly for the measure reading, which kind Cls also don’t have. So based on the logic of the argumentation in the book, kind Cls have a third structure. What should that be?

In Chapter 10, there is some inconsistency in the discussion of Wu definite noun phrases containing a Cl. These noun phrases can contain a demonstrative, and it is not possible to insert the numeral „one” between the demonstrative and the Cl on the definite reading: Dem (\*one) Cl book.

- (1)     $\eta\text{ta}$  (\*i?)  $\text{p}\acute{\text{e}}\text{n}$   $\text{c}\acute{\text{y}}$   
          that one Cl book  
          (ex. 13b)

The proposal is that demonstratives are in spec DP, and in the definite reading the Classifier raises from Cl to D across the empty Num head. While not spelled out explicitly, the idea is probably that *one* sits in the Num head, and would block the required movement, hence „Dem Cl book” is OK but „\*Dem one Cl book” is not. In the next example, however, we see that numerals higher than *one* are perfectly OK between the demonstrative and the Cl.

- (2)     $\eta\text{ta}$   $\text{san}$   $\text{p}\acute{\text{e}}\text{n}$   $\text{c}\acute{\text{y}}$   
          that three Cl book  
          these three books (ex. 14a)

If numerals are heads, as implied by the blocking account of \*Dem one Cl book” in (1), then „that three Cl book” in (2) should never arise, as the numeral *three* in the Num head should block the movement. On the other hand, if the numeral *three* is a NumP specifier, then Cl-to-D movement predicts „Dem Cl Num N” order. However, in (2) we clearly get „Dem Num Cl N”.

To tackle this problem, Li suggests that making a functional head visible is a last resort (Giusti 2002), and that „the D head ... has to be visible only when we want to express singularity” (p. 283). That is, the classifier raises to D only in this case. On the one hand, it would have been nice to see the technical details of this account spelled out (as it stands, the proposal remains fairly stipulative). On the other hand, if this analysis is to be maintained, then the statement that „definite classifiers always act as the head of DP” on the previous page should have been less categorical.

The title of section 2.2.3 in Chapter 10 is *Adjs/RCs as [Spec DP]*. This promises an analysis that is never spelled out. The relevant section does propose that „those modifiers are DP modifiers” (p. 285), but this is compatible with these modifiers being DP-adjuncts, too, and does not necessarily mean that they are DP specifiers. Indeed, it is difficult to see how they could be DP specifiers. The previous section argues that demonstratives are always closer to the numeral than Adjs and RCs, and argues that demonstratives sit in spec DP. So if Adjs and RCs are also DP specifiers, then the theory has to allow multiple specifiers, and also has to make sure that Adjs and RCs always occupy higher specifier positions than demonstratives. It is unclear how this could be achieved in an explanatorily adequate way. (Indeed, the discussion on p. 282 states that „demonstratives are specifiers to the DP and the other modifiers are simply DP modifiers”). Given that the specifier analysis of Adjs and RCs is never spelled out in the book, it is possible that the title of this section is simply the result of a copy-paste error (the title of the previous section is *Dems as [Spec DP]*).

### 3.3. Organization

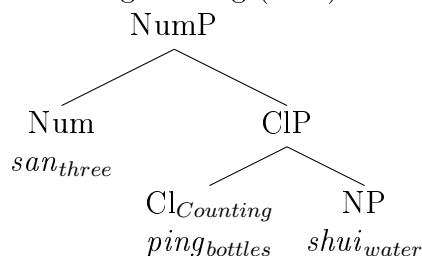
The book is well-organized and reads easily. Each section begins with a clear statement of the research question and a short summary of what the answers are going to be. There are also several intermediate summaries within the chapters. These features help the reader keep track of the already introduced arguments and the ground that will need to be covered in the chapter. At the same time, it lacks a summary or conclusions chapter; it ends abruptly with the concluding remarks of chapter 10. The first two parts are tightly connected to one another, but the last part is much more loosely related to the previous discussion, and so a summary chapter collecting the different threads and presenting the big picture emerging from the analyses is badly needed. There are also no conclusions at the end of Part I, Part II, or Part III. In absence of a final conclusion (or rather in addition to it), summaries at these points would have helped the reader to see again the whole arc of the argumentation within each part. Chapter 5, the last chapter in Part I, has no conclusions either (but all other chapters end with a conclusion section).

### 3.4. Errors in the text

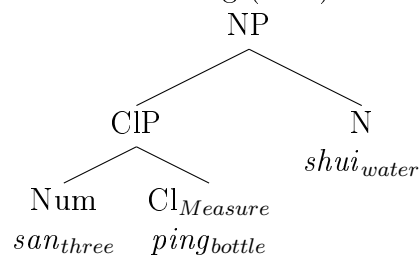
There are also some potentially confusing errors in the text. Firstly, on p. 140, Li writes that "What came out of the discussion of the different contexts in the previous section is that on the counting readings, Num and Cl behave like a single constituent, while they

do not, on the measure reading.” But as it turns out from ex. 22, immediately following this statement, and the rest of chapter 6, this is exactly the other way around: Num and Cl form a constituent on the measure reading, and not on the counting reading.

(3) Counting reading (22 a)



(4) Measure reading (22 b)



The intended sentence is probably „What came out of the discussion of the different contexts in the previous section is that on the counting readings, Cl and N behave like a single constituent, while they do not, on the measure reading.”

Secondly, all of chapter 7 is about pre-classifier (dimensional) adjectives, and the fact that adjectives between Num and Cl do not comment on the actual size or quantity of N’s denotatum. However, (33b)’s „one big Cl old-style wooden bed” is commented on as follows: „The pre-classifier adjective does comment on the bed’s actual size” (p. 193). This was most likely intended to be „The pre-classifier adjective does not comment on the bed’s actual size”.

The third and most confusing error is in the discussion of the modification marker *de* on p. 217. Li writes that container classifiers „(with low and precise numbers) can be followed by *de* when they denote measure units but not when they denote counting units”. In (29a) we see the counting reading of *three Cl.bottle wine*, but in contrast to the above quote, *de* is shown to be optional, and the following discussion states that on the counting reading "it is possible to insert *de*".

- (5) a. wo kai le san ping (de) jiu.  
 I open PFV three CL<sub>bottle</sub> DE wine  
 I opened three bottles of wine. (29 a) [Counting]
- b. wo-de wei neng zhuangxia san ping de jiu.  
 my stomach can hold three CL<sub>bottle</sub> DE wine  
 My stomach can hold three bottles of wine. (29 b) [Measure]

In (29b) we see the measure reading of *three Cl.bottle wine*, with *de* being grammatical between Cl and N, in accordance with the above quote. However, the following discussion states that if *bottle* has the measure reading, it „cannot be followed by *de*”. The volume would also have benefitted from a more conscientious copy-editor: there are many small grammatical errors in the book, and there are also a good number of typos and typesetting errors.

## 4. Conclusions

Overall, the merits of the book outweigh the minor problems. It is rich in detail and makes a valuable contribution to the study of the Chinese NP. It also yields new insights into the counting vs. measure readings of classifiers in general, and I highly recommend it to anyone interested in these topics.

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