

Two Surface Positions of Numeral Classifiers

The empirical issues of this talk are the base- and surface positions of classifiers (CIs) in Mandarin Chinese. Theoretically, we show a general backward EPP effect in syntax.

Three puzzles It has been assumed that a cardinal numeral is base-generated at Spec of #P (Borer 2005, Cover & Zwarts 2006), and a CI heads a lower projection (Tang 1990, Borer 2005, Svenonius 2008). However, three puzzles remain in the syntax of Mandarin Chinese.

First, why may a numeral not be separated from a CI by a phrasal element, as shown in (1) (In Chinese, a modifier introduced by *de* must be phrasal)?

- (1) a. *3 dà de běn shū b. 3 dà běn shū
 3 big de CI book 3 big CI book ‘3 big books’

Second, why may a CI not be elided or silent in the language, as shown in (2)?

- (2) Q: Bǎoyù mǎi-le jǐ zhī bǐ? Ans: Tā mǎi-le 5 *(zhī).
 Baoyu buy-prf how.many CI pen he buy-prf 5 CI
 ‘How many pens did Baoyu buy?’ ‘He bought 5.’

Third, why may a CI have two surface positions? Specifically, a CI may follow a noun in this language, if a numeral is immediately followed by either the non-sortal CI *ge* or a copy of the post-noun CI, as shown in (3a) and (3b), respectively.

- (3) a. 3 ge shuǐ-dī b. 3 dī shuǐ-dī
 3 CI water-CI 3 CI water-CI’ Both: ‘3 drops of water’

One might deny the CI status of the right-element of the complex cluster in data like (3). However, the following four facts support their CI status.

Fact A: Unlike a substantial lexical element, the post-N element may not form a question.

- (4) a. Q: Nǎlǐ yǒu 3 duǒ shénme huā? Ans: Nǎlǐ yǒu 3 duǒ jú-huā.
 there have 3 CI what flower there have 3 CI chrysanthemum
 ‘What kind of 3 flowers are there?’ ‘There are 3 chrysanthemums.’
 b. Q: *Nǎlǐ yǒu 3 ge shénme dī? Ans: Nǎlǐ yǒu 3 ge shuǐ-dī.
 there have 3 CI what CI there have 3 CI water-CI
 ‘There are 3 drops of water.’

Fact B: Unlike a substantial lexical element, the post-N element may be the antecedent of a counting unit.

- (5) a. *Nǎlǐ yǒu hěnduō qì-qíu, měiyī qíu dōu hěn dà.
 there have many air-ball each ball dou very big
 b. Nǎlǐ yǒu hěnduō huā-duǒ, měiyī duǒ dōu hěn dà.
 there have many flower-CI each CI dou very big
 ‘There are many flowers. Each of them is big.’

Fact C: Both a pre-N sortal CI and the post-N element may license the occurrence of a mass noun with a numeral, whereas *ge* needs the support of a sortal CI to occur with a mass noun.

- (6) a. *3 ge shuǐ b. 3 dī shuǐ c. 3 ge shuǐ-dī
 3 Cl water 3 Cl water 3 Cl water-Cl ‘3 water-droplets’

Fact D: Both a pre-N Cl and the post-N element are unspecified with the readings of collectivity and plurality (contra Li & Thompson 1981:82). 3 ge fáng-jīān (3 Cl room-Cl) does not mean ‘3 groups of rooms’ and 1 ge fáng-jīān (1 Cl room-Cl) is not plural.

The above three puzzles, exemplified by (1), (2), (3), lead us to the generalization in (7):

(7) In Mandarin Chinese, a cardinal numeral must be followed immediately by a head element, i.e., a Cl (including a head cluster composed of an adjective and a Cl).

Analysis of the two positions of Cls I argue that Cls belong to either specifying or selecting types. The specifying ones are characteristic-denoting elements (Allen 1977, Tai & Wang 1990), which are relational terms. If relational terms are predicates of their licensing nouns (Bruin & Scha 1988), such Cls are base-generated as predicates of the relevant nouns. Thus, such a Cl and a noun form a constituent in their base-positions, excluding a numeral. The selecting Cls have a selection relation with particular nouns (e.g. *pī* for horses and *zhǎn* for lamps). Accordingly, such Cls are also directly merged with nouns, excluding numerals.

(8) [NP Cl] [the base-position of a sortal Cl. It is also the structure of the clusters in (3)]

In order to derive the [numeral-Cl-NP] construction, such as (6b), I claim that the Cl is raised from the position in (8) to the head which takes a numeral as its specifier. Thus, the pre-noun sortal Cl appears in its landing site, #.

This # is also the base-position of the non-sortal Cl *ge*. If both *ge* and the sortal Cl remain in situ, the construction in (3a) is derived. If the two occurrences of the Cl raising are both phonologically realized, the Cl copying construction in (3b) is derived.

A backward EPP effect? *Ge* in (3a) is a place-holder, required by the generalization in (7). I link (7) to the V2 effect in Germanic languages: in both cases, the presence of an element at a Spec position requires the overt form of a head element. This effect looks like a backward EPP effect, which indicates that certain head elements require the overt form of an element at a Spec position. In Chomsky (2007, 2008), EPP is treated as the effect of an edge-feature. The backward EPP effect studied here does not seem to have anything to do with edge features.

Main References Allan, K. 1977. Classifiers. *Language* 53:285-311. Borer, H. 2005. *In Name Only*. Oxford University Press. Bruin, J. de, & R. Scha. 1988. The interpretation of relational nouns. *Proceedings of the 26th Annual Meeting of the Association for Computational Linguistics*, 25-32. Corver, N. & J. Zwarts. 2006. Prepositional Numerals. *Lingua* 116:811-835. Li, C.N. and S.A. Thompson. 1981. *Mandarin Chinese. A functional reference grammar*, University of California Press. Svenonius, P. 2008. The position of adjectives and other phrasal modifiers in the decomposition of DP. *Adjectives and adverbs: syntax, semantics, and discourse*, ed. L. McNally & C. Kennedy, 16 – 42, Oxford University Press. Tang, C. J. 1990. Chinese phrase structure and extended X'-theory. PhD thesis, Cornell University.