The Syntactic Positions of Numeral Classifiers in Mandarin Chinese

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An Empirical Issue

• Where are numeral classifiers in Mandarin Chinese base-generated?
• Where do they surface?
Outline

1. The dependency direction between a numeral (#) and a numeral classifier (Cl)
2. The co-occurrence of two CIs
3. The base and surface positions of various types of CIs
1. # and Cl: who needs whom?

  
  Too vague.

- Examples in which a Cl is not next to a #
• 3大本書
• 那裡有大本大本的精裝書
• 很多本書
• 這地方座座高山都很陡
Three facts to support the dependency that a # needs to be next to a head element, Cl

**Fact A:**  
* # XP  ⇔  Ok # X0

*3大的本書  3大本書

*3大的箱書  3大箱書
Fact B: No # alone may occur as an argument

問: How many pens did John buy?
答: He bought 5.

問: 寶玉買了幾支筆？
答1: *他買了5.
答2: 他買了5支.
問: How many people are enough for carrying this piano?
答: 4 is enough.

問: 幾個人才能抬起這架鋼琴？
答1: *4就夠了.
答2: 4個就夠了.

I worked from 8 to 11 yesterday.
*我昨天從8到11都在工作。
我昨天從8點到11點都在工作。
Fact C:

\[ * \ # \ NP \ \iff \ Ok \ # \ CI \ NP \]

*3書

*3 [大的書]

A generalization:
A cardinal numeral is licensed by a local overt head element in Chinese.
My analysis

QP

Specifier Q'

Q Complement

Numeral Cl/measure word
2. The co-occurrence of a sortal Cl and the non-sortal Cl *ge*

3 個水滴  3 個花朵
3 個米粒  3 個布條
3 個面團  3 個線條
3 個房間  3 個蒜頭
Against a lexical approach

3 個水滴 3 個花朵

Is 水滴 a compound, denoting a modifier-modifiee relation?
Fact A: unlike a substantial lexical element, the post-N element may not form a question.

問：那裡有3朵什麼花？
答：那裡有3朵菊花。

問：*那裡有3個什麼滴？
答：那裡有3個水滴。

問：*那裡有3個什麼朵？
答：那裡有3個花朵。
Fact B: unlike a substantial lexical element, the post-N element may be the antecedent of a counting unit.

那裡有很多氣球。*每一球都很大。
那裡有很多電腦。*每一腦都很大。

那裡有很多花朵。每一朵都很大。
那裡有很多水滴。每一滴都閃閃發光。
Fact C: the post-N element does not obey the Lexical Integrity Principle.

寶玉沒吃什麼
A. ‘Baoyu did not eat anything.’
B. ‘What did Baoyu not eat?’

寶玉已經否決了什麼
A. ‘Baoyu already rejected something.’
   (not available)
B. ‘What did Baoyu already reject?’
A new observation: *ge* alone may not occur with a mass noun

| 3 張紙 | *3 個紙 |
| 3 股蒸汽 | *3 個蒸汽 |
| 3 滴油 | *3 個油 |

3張桌子

3個桌子
The same constraint on other languages

• The non-sortal Cl méi (枚) in classical Chinese may not occur with a mass noun (see data in Liu 1965).
• The non-sortal Cl gay in Korean may not occur with mass nouns (Byeong-Uk Yi, p.c.)
• The non-sortal Cl ko in Japanese has the same constraint (Byeong-Uk Yi’s p.c. with Takashi Iida).
## The same constraint on event nominals

<table>
<thead>
<tr>
<th>count eventualities</th>
<th>mass eventualities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Achievement</strong></td>
<td></td>
</tr>
<tr>
<td>- 一次/個 驚嚇</td>
<td>- 一次/個/個 跑步</td>
</tr>
<tr>
<td>- 一次/個 噴嚏</td>
<td>- 一次/陣/個/個 大笑</td>
</tr>
<tr>
<td><strong>Accomplishment</strong></td>
<td></td>
</tr>
<tr>
<td>- 一次/個 會議</td>
<td>- 一次/場/個 戀愛</td>
</tr>
<tr>
<td>- 一次/輪/個 比賽</td>
<td>- 一次/陣/個 憤怒</td>
</tr>
</tbody>
</table>
However,

*3 個水
3 滴水
3 個水滴

GE needs the support of a sortal Cl to occur with a mass noun.

Where is the Lexical Integrity?
Similar double CI constructions in Korean

from Byeong-Uk Yi (2008:19, 21, and p.c.):

   a.      mul-pangwul se gay
          water-Clsort  3  Clgen
   b.      mul     se pangwul
          water  3  Clsort
          both: ‘3 water-droplets’

   a.      soykoki-cokak twu gay
          beef-Clsort  2  Clgen
          both: ‘2 beef pieces’
   b.      soykoki twu cokak
          beef        2  Clsort
Against the collective approach to N-Cl clusters

- Li & Thompson (1981:82): N-Cl clusters always have a collective or plural reading.
- The collective reading claim is falsified:
  when such a cluster is preceded by a numeral such as 3, the reading is not 3 groups (cf. 3 committees); instead, the reading is simply three individuals. 3 個水滴 does not mean ‘3 groups of water-drops’.
Against the plural approach to N-Cl clusters

• The plural reading claim is also falsified
• such a cluster is compatible with the numeral 1, and the reading of the constructed nominal is not plural at all.

One may say 1 個水滴 to mean one single water-drop.
Conclusion of the section

• The non-sortal Cl \textit{ge} may occur with a sortal Cl in Chinese.

• Cls in Chinese have more than one surface position.
3. The syntactic positions of *ge* and other CIs

3.1 The surface positions

A basic formal property of CIs is that they are able to occur between a numeral (#) and a noun.
three distributional types of sortal CIs

Construction A. N Cl
Construction B. # ge N Cl
Construction C. # Cl N (basic)

I. A, B, C 3粒米
II. A, C only 3匹馬，請介紹馬匹的構造
III. C only 3隻雞
3.2 The base positions

Tai & Wang (1990:38):
“A classifier categorizes a class of nouns by picking out some salient perceptual properties, either physically or functionally based, which are permanently associated with entities named by the class of nouns” (also Allan 1977, a.o.)

3頭蒜 3瓣蒜 3條布 3塊布
3張床 3張紙 3捲紙 3條魚 3尾魚

============= 
3匹馬 3盞燈 2泡尿 2椿心事
*3匹紙 *3盞蠟燭 *3泡痰
Two kinds of sortal classifiers

“Numeral classifiers can be an open lexical class.” Aikhenvald (2003:98)

一線希望 一丸冷月 (He 2000: 119)

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Specifying CIs</th>
<th>Selecting CIs</th>
</tr>
</thead>
<tbody>
<tr>
<td>-denoting</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Open-class</td>
<td>+</td>
<td>-</td>
</tr>
</tbody>
</table>

This classification has nothing to do with the count-mass contrast.
3.2.1 The base-position of specifying CIs

- Intrinsic characteristics-denoting elements are relational terms (see de Bruin & Scha 1988, Déchaine 1993:§2.4.3.7, among others).
- Thus, a specifying CI is a predicate of the noun.
A predicate and its subject are merged together
3.2.2 The base-position of selecting CIs

- If X selects Y, X takes Y as its complement. => X and Y are merged together.

- 馬匹 船隻 燈盞

$$\text{SortP}$$

$$\text{NP} \quad \text{Sort}$$
3.3
SortP as the complement of Q

N-Cl clusters may be preceded by *ge*, which is in turn preceded by a numeral

See slide 9.
The motivation of the movement: the generalization on slide 8.

=> Clsorts have two possible surface positions.
3.5 The syntactic nature of the non-sortal CI *ge*

- Double CI construction ⇔ CI-copying construction
  - 三個房間 ⇔ 三間房間
  - 三個石塊 ⇔ 三塊石塊
  - 三個線條 ⇔ 三條線條
  - 三個花朵 ⇔ 三朵花朵
  - *三個紙張 ⇔ *三張紙張

- It is possible that the two copies form a movement chain, and they are just phonological realizations of the two occurrences of the element that undergoes the movement.
- “*Ge has no lexical semantics*” (Myers 2000: 187)
- It is an expletive-like element, associated with the post-N CI*sort*. A place-holder of Q, an Aux-like element.
4. Summary

The syntactic positions of Cls in Mandarin Chinese:

Surface positions:
- Sortal Cls: Q and Sort
- Non-sortal Cls: Q

Base positions:
- Sortal Cls: Sort
- Non-sortal Cls: Q
5. Two Clarifications

The notion of “massifier” of “mass-classifier” is problematic.

The so-called two contrasts between mass and count nouns wrt CIs are also problematic.

If I have more time


