Splittivity in Mandarin: A diagnostic for argument-gap dependencies

**Split partitivity as stranding:** In Mandarin (Chinese), a numeral classifier (henceforth NCL) fragment can be interpreted as a partitive expression relative to a DP antecedent (1a-b), a phenomenon I refer to as **split partitivity** (henceforth SP).

(1) a. \[
\begin{array}{l}
\text{[DP Na-liu-ge xuesheng]}_i \hspace{1em} \text{you [NCLP san-ge t]}_j \hspace{1em} \text{renshi Lisi.} \\
\text{Dem-6-CL student Top exist 3-CL know Lisi.}
\end{array}
\]

‘Those six students, three (of them) know Lisi.’

b. \[
\begin{array}{l}
\text{[DP Na-liu-ge xuesheng]}_i \hspace{1em} \text{lai-le [NCLP san-ge t]}_j. \\
\text{Dem-6-CL student come-Perf 3-CL (unaccusative)}
\end{array}
\]

Lit. ‘Those six students came three (of them).’

c. \[
\begin{array}{l}
\text{*Na-liu-ge xuesheng ku-le san-ge.} \\
\text{Dem-6-CL student cry-Perf 3-CL (unergative)}
\end{array}
\]

INT: ‘Those six students cried three (of them).’

In this paper, **I will argue for a stranding approach to SP:** The NCL fragment in cases of SP is **analyzed as an element directly merged with its nominal associate and stranded when its nominal associate undergoes movement.** For example, I analyze the NCL fragment in (1a) as a stranded element in the course of topicalization of the DP antecedent. I will contrast the stranding approach to SP with three alternative analyses of (1a), a pro-drop analysis, an A-licensor analysis and an ellipsis analysis, and eliminate these alternative analyses with direct evidence. In the meantime, I will show that the distribution of SP, such as an unaccusative/unergative distinction in (1b-c) (cf. Miyagawa 1989), can be accounted for by the stranding approach to SP.

Under a stranding approach, the NCL fragment in cases of SP is on a par with a floating quantifier in cases of quantifier-float (Sportiche 1988), but unlike quantifier-float in English, French and Japanese, SP in Mandarin does not show a subject/object distinction or an A/A distinction (Bobaljik 2003). I suggest that **(i) in cases of SP, a case filter violation is incurred when a DP is directly merged with a NCL; thus, the DP must move to a case position and the NCL must be stranded.** I also suggest that **(ii) in Mandarin, a topic position is a case position.** From (i) and (ii) it follows that A-movement as well as A-movement, either from a subject or object position, can feed SP.

**Evidence for (i):** The DP that is in the PP in (2a) is arguably assigned case by the postposition and satisfies the case filter. This indicates that the constituent formed by directly merging a NCL with a DP or a pronoun is illicit because the DP or the pronoun is not case-licensed (2b).

(2) a. \[
\begin{array}{l}
\text{[PP [DP na-liu-ge xuesheng] zhong-de [NCLP san-ge (xuesheng)]]} \\
\text{Dem-6-CL student among 3-CL student}
\end{array}
\]

‘three (students) among those six students.’

b. \[
\begin{array}{l}
\text{[NCLP san-ge [DP na-liu-ge xuesheng]]} \\
\text{3-CL Dem-6-CL student}
\end{array}
\]

INT: ‘three of those six students’

**Evidence for (ii):** The possibility of a dangling topic not linked to a gap in the comment clause in Mandarin indicates that topic positions in Mandarin is a case position (3).

(3) Hua (a), Lisi zui xihuan meigu-hua.

flower Top Lisi most like rose-flower

‘Flowers, Lisi likes roses the most.’

**Split partitivity as a diagnostic for argument-gap dependencies:** I propose that SP can be used as a tool to study various constructions in Mandarin that involve argument-gap dependencies. Specifically, I will show that SP is licit in raising constructions, where the NCL fragment is next to an A-trace of its nominal associate (4a). By contrast, SP is illicit in control constructions, where the NCL is next to a PRO rather than a trace (4b). Constructions that involve null operator (henceforth NOP) movement and predication can contain two independent movement chains, allowing one NCL to be stranded in each chain. In particular, the NCL fragment in the embedded clause is next to an A-trace of the NOP (4c).

(4) a. \[
\begin{array}{l}
\text{[CP ... [DP, ... [NCLP NCL t] ...]} \\
\text{(Raising)}
\end{array}
\]

b. \[
\begin{array}{l}
\text{[CP ... [DP, ... [NCLP NCL PRO] ...]} \\
\text{(Control)}
\end{array}
\]

c. \[
\begin{array}{l}
\text{[TOP [DP, ... [NCLP NCL t] ...]} \\
\text{(NOP movement and predication)}
\end{array}
\]

\[
\begin{array}{l}
\text{[CP NOP, ... [NCLP NCL t] ...]}
\end{array}
\]
These patterns of SP set the basis for the study of passive constructions (BEI-constructions) (5a), causative constructions (BA-constructions) (5b) and resultative DE-constructions (5c). The analysis of these constructions remains debatable; in particular, BEI-constructions have been analyzed as involving raising or control (Liu and Huang 2016), or NOP movement and predication (Huang, Li and Li 2009).

(5) a. Na-liu-ge xuesheng bei (Lisi) dabai-le __. (Passive)
   Dem-6-CL student BEI Lisi defeat-Perf __
   ‘Those six students were defeated (by Lisi),’

b. Lisi ba na-liu-ge xuesheng dabai-le __. (Causative)
   Lisi BA Dem-6-CL student defeat-Perf __
   ‘Lisi defeated those six students.’

c. Haizi-men qi-de na-liu-pi-ma __ lei-ge. (Resultative)
   children ride-DE Dem-6-CL-horse __ tired-Perf __
   ‘The children rode those six horses as a result of which (the horses) were tired.’

Based on patterns of SP, I argue that canonical BEI-constructions, which have a transitive counterpart, may involve either raising (6a) or control (6b) depending on whether BEI is modified by a subject-oriented adverb, but cannot involve NOP movement and predication (6c).

(6) a. [Na-liu-ge xuesheng] bei (Lisi) dabai-le [NCLP san-ge t].
   Dem-6-CL student BEI Lisi defeat-Perf 3-CL
   Lit. ‘Those six students were defeated three (of them) (by Lisi).’

b. *[Na-liu-ge xuesheng] guyi bei (Lisi) dabai-le [NCLP san-ge PRO].
   Dem-6-CL student intentionally BEI Lisi defeat-Perf 3-CL
   INT: ‘Those six students intentionally got defeated three (of them) (by Lisi).’

c. *[Na-shi-ge xuesheng] (a), you [NCLP liu-ge t] bei
   Dem-10-CL student Top exist 6-CL BEI
   [NOP (Lisi) dabai-le [NCLP san-ge t]].
   Lisi defeat-Perf 3-CL
   INT: ‘Those ten students, six (of them), were defeated three (of them) (by Lisi).’

While Huang, Li and Li (2009) suggest that NOP movement and predication are involved in canonical BEI-constructions because the matrix subject that precedes BEI and the gap it associates with may exhibit cross-clausal, A-dependencies (7a), patterns of SP indicate that (7a) is an instance of superraising (7b-c).

(7) a. Na-liu-ge xiaotou bei wo jiao Lisi [pai jingcha [zhuaou-le __]].
   Dem-6-CL thief BEI I ask Lisi send police arrest-Perf __
   Lit. ‘Those six thieves were asked-Lisi-to-send-some-police-to-arrest me.’

b. Na-liu-ge xiaotou bei wo jiao Lisi [pai jingcha [zhuaou-le san-ge]].
   Dem-6-CL thief BEI I ask Lisi send police arrest-Perf 3-CL
   Lit. ‘Those six thieves were asked-Lisi-to-send-some-police-to-arrest three (of them) me.’

c. *Na-shi-ge xiaotou (a), you liu-ge bei wo jiao Lisi
   Dem-10-CL thief Top exist 6-CL BEI I ask Lisi
   [pai jingcha [zhuaou-le san-ge]].
   send police arrest-Perf 3-CL
   INT: ‘Those ten thieves, six (of them) were asked-Lisi-to-send-some-police-to-arrest three (of them) me.’

I will also provide evidence for a raising analysis of canonical BA-constructions, which have a transitive counterpart, and a control analysis of non-canonical BEI-constructions and BA-constructions, which do not have a transitive counterpart. Finally, I will analyze resultative DE-constructions as involving NOP movement and predication (8).

(8) a. [Na-shi-pi ma] (a), you [NCLP liu-pi t] bei (haizi-men) qi-de
   Dem-10-CL horse Top exist 6-CL BEI children ride-DE
   [NOP, you [NCLP san-pi t] lei-ge. exist 3-CL tired-Perf __
   Lit. ‘Those ten horses, six (of them) were ridden as a result of which three (of them) were tired (by the children).’

b. [Na-shi-pi ma] (a), haizi-men ba [NCLP liu-pi t] qi-de
   Dem-10-CL horse Top children BA 6-CL ride-DE
   [NOP, you [NCLP san-pi t] lei-ge. exist 3-CL tired-Perf __
   Lit. ‘Those ten horses, children rode six (of them) as a result of which three (of them) were tired.’