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Split partitivity 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. [$_{DP}$ ***Na-liu-ge   xuesheng***]$_i$ (*a*),   *you*   [$_{NCLP}$ ***san-ge***   t$_i$]   *renshi   Lisi.*
        Dem-6-CL   student   Top   exist   3-CL   know   Lisi
        'Those six students, three (of them) know Lisi.'

   b. [$_{DP}$ ***Na-liu-ge   xuesheng***]$_i$ *lai-le*   [$_{NCLP}$ ***san-ge***   t$_i$].   (unaccusative)
        Dem-6-CL   student   come-Perf   3-CL
        Lit. 'Those six students came three (of them).'

   c. *****Na-liu-ge   xuesheng***   *ku-le*   ***san-ge***.   (unergative)
        Dem-6-CL   student   cry-Perf   3-CL
        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 Ā-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/Ā 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 Ā-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. [$_{PP}$ [$_{DP}$ *na-liu-ge   xuesheng*] ***zhong***]-*de*   [$_{NCLP}$ *san-ge*   (*xuesheng*)]
        Dem-6-CL   student   among   3-CL   student
        'three (students) among those six students.'

   b. *[$_{NCLP}$ *san-ge* [$_{DP}$ *na-liu-ge   xuesheng*]]
        3-CL   Dem-6-CL   student
        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   meigui-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 Ā-trace of the NOP (4c).

(4) a. [$_{CP}$ ...   DP$_i$ ...   [$_{NCLP}$ NCL   t$_i$]   ...]   (Raising)

   b. *[$_{CP}$ ...   DP$_i$ ...   [$_{NCLP}$ NCL   PRO$_i$]   ...]   (Control)

   c. [$_{TopP}$ DP$_i$ ...   [$_{NCLP}$ NCL   t$_i$]$_j$ ...   (NOP movement and predication)

       [$_{CP}$ NOP$_j$ ...   [$_{NCLP}$ NCL   t$_j$]   ...]]

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-le*.   (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*]$_i$ *bei*   (*Lisi*)   *dabai-le*   [$_{NCLP}$ **san-ge** t$_i$].
    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*]$_i$ **guyi**   *bei*   (*Lisi*)   *dabai-le*   [$_{NCLP}$ **san-ge** PRO$_i$].
    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*]$_i$ (*a*),   *you*   [$_{NCLP}$ **liu-ge** t$_i$]   *bei*
    Dem-10-CL   student   Top   exist   6-CL   BEI
    [NOP$_j$ (*Lisi*)   *dabai-le*   [$_{NCLP}$ **san-ge** t$_j$]].
    Lisi   defeat-Perf   3-CL
    INT: 'Those ten students$_i$, six (of them$_i$)$_j$ were defeated three (of them$_j$) (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, Ā-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*   [*zhuazou-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 by me.'

    b. *Na-liu-ge*   *xiaotou*   *bei*   *wo*   *jiao*   *Lisi*   [*pai*   *jingcha*   [*zhuazou-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) by 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*   [*zhuazou-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) by 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*]$_i$ (*a*),   *you*   [$_{NCLP}$ **liu-pi** t$_i$]   *bei*   (*haizi-men*)   *qi-de*
    Dem-10-CL   horse   Top   exist   6-CL   BEI   children   ride-DE
    [NOP$_j$ *you*   [$_{NCLP}$ **san-pi** t$_j$]   *lei-le*.
    exist   3-CL   tired-Perf
    Lit. 'Those ten horses$_i$, six (of them$_i$)$_j$ were ridden as a result of which three (of them$_j$) were tired (by the children).'

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