Reflexive Binding in Mandarin Fragment Answers

Overview: The literature on Mandarin reflexives has long assumed that, whereas *ziji* can take long-distance (LD) antecedents, *ta-ziji* is strictly local (Huang et al. 1984, 2009, a.o.). Though some work has shown that *ta-ziji* is also compatible with LD binding in certain circumstances (e.g., Dillon et al. 2016; Lyu & Kaiser 2023; Pan 1997), the standard view continues to be that LD binding is much more marked for *ta-ziji* than for *ziji* in sentences like (1b), where LD binding crosses an animate local subject.

(1) a. Zhangsan$_i$ shuo Lisi$_j$ xihuan shui?
    Zhangsan say Lisi like   who
    'Who did Zhangsan$_i$ say Lisi$_j$ liked?'
  b. Zhangsan$_i$ shuo Lisi$_j$ xihuan ziji$_{i,j}$/ta-ziji$_{??i,j}$.
    Zhangsan say Lisi like   self/himself
    'Zhangsan$_i$ said that Lisi$_j$ liked self$_{i,j}$/ himself$_{??i,j}$.'
  c. Ziji$_{i,j}$/Taziji$_{i,j}$.

We present experimental evidence that this interpretive difference between *ziji* and *ta-ziji* disappears entirely in fragment answers, as in (1c). To account for this novel finding, we argue for an **ellipsis analysis** of Mandarin fragment answers and a **pragmatic analysis** of Mandarin reflexive use. Specifically, we propose that the difference observed in (1b) is pragmatically motivated rather than inherent to the reflexive forms, and that the condition under which this difference arises is bled by fragment formation. This work sheds new light on the nature of Mandarin reflexives and their relation to one another.

Methods: We created 80 target items consisting of simple question-answer dialogues (cf. (1)). Questions all followed the format of (1a). Four kinds of answers were created by crossing **reflexive form** (*ziji* vs. *ta-ziji*) and **answer form** (full vs. fragment), as in (1b)–(1c). To control for known semantic/pragmatic effects on reflexive interpretation, we chose embedded verbs that readily allow, but do not require, co-construal between subject and object. The matrix verb *shuo* 'say' was used throughout so that the matrix subject was always the source of information.

Target items were distributed across four surveys, each of which included only one kind of answer (e.g., only full answers with *ziji*). Surveys also included control items, in which person or gender features were manipulated to ensure that the embedded subject was the only possible antecedent for the reflexive, as well as filler items, which contained the personal pronoun *ta* rather than a reflexive.

204 native Mandarin speakers were recruited via Prolific Academic. Each participant took part in only one of the surveys. On each trial, participants were asked two questions about the answer portion of the dialogue. **Question 1** probed participants' preferred interpretations of the reflexive or personal pronoun by asking whether they thought it referred to the matrix or embedded subject. **Question 2** asked whether the alternative interpretation was also possible: for example, if the embedded subject was selected on the Question 1, then Question 2 would ask if the reflexive or personal pronoun could refer to the matrix subject.

Results: Data were analyzed in R using mixed-effects logistic regressions (lme4 package, Bates et al. 2015). Responses on Questions 1 and 2 from all four surveys are shown in Fig. 1.

Consistent with the standard view, participants were significantly more likely to prefer the LD antecedent (i.e., the matrix subject) for *ziji* than for *ta-ziji* ($p<0.001$) in full answers. The same asymmetry was also found in the likelihood of judging the LD antecedent to be possible ($p<0.001$). In fragment answers, however, there was no difference between *ziji* and *ta-ziji* in the likelihood of preferring the LD antecedent ($p=0.93$), nor in the likelihood of judging the LD antecedent to be possible ($p=0.38$).

Importantly, with respect to interpretive preferences (Question 1), neutralization reflected both a greater rate of selection of the LD antecedent for *ta-ziji* ($p<0.001$) <u>and</u> a lower rate of selection of the LD antecedent for *ziji* ($p<0.001$) in fragment answers. On the other hand,
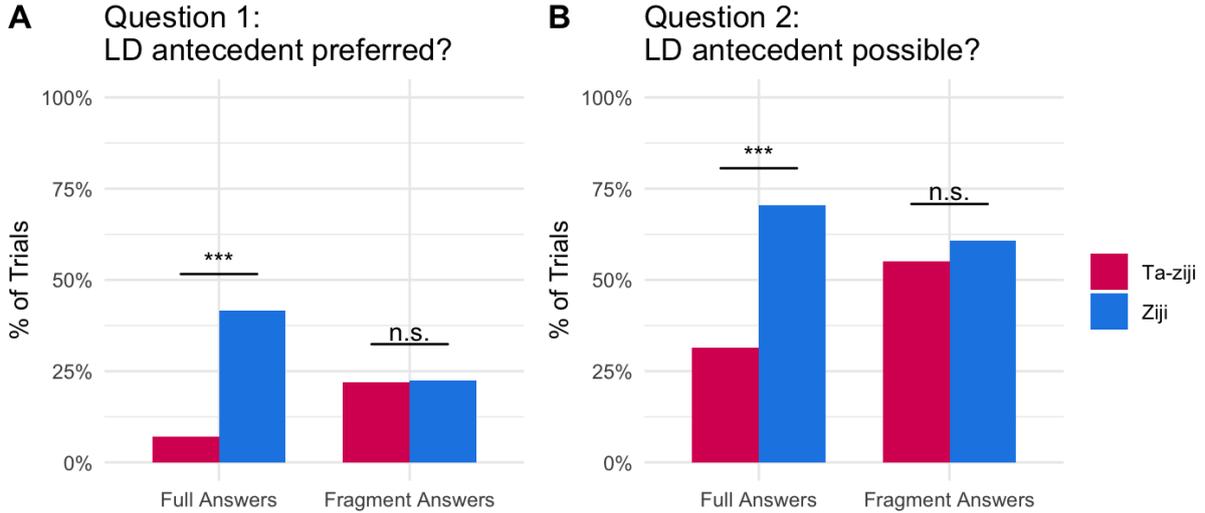
Figure 1: **(A)** Percentage of trials on which the LD antecedent was selected on Question 1. **(B)** Percentage of trials on which the LD antecedent was judged to be possible on Question 2.

neutralization with respect to interpretive possibilities (Question 2) was driven almost entirely by a greater rate of affirmative responses for *ta-ziji* ($p<0.001$) in fragment answers, with no significant difference found for *ziji* ($p=0.10$) across answer forms.

Analysis: To account for the increased availability of LD antecedents for *ta-ziji* in fragment answers, we adopt an ellipsis analysis following Merchant (2004), according to which fragment answers begin as full answers with full clausal syntax. This approach is supported by the fact that Condition B effects persisted in fragment filler items in our surveys, such that co-construal between the personal pronoun *ta* and the would-be embedded subject (e.g., *Lisi* in (1)) was uniformly judged to be impossible. As shown in (2), the fragment undergoes successive-cyclic A'-movement to a peripheral projection of the matrix clause, and the TP complement of this projection is subsequently elided.

(2) $[_{CP} [_{DP}$ Ta-ziji$]_2 \langle [_{TP}$ Zhangsan shuo $[_{CP}$ t_2 $[_{TP}$ Lisi xihuan $t_2]]]\rangle]$

Following Fox (1999) and van Urk (2019), among many others, we assume that reflexives can be bound at intermediate positions in a movement chain. Thus, what looks like LD binding of *ta-ziji* in fragment answers is in fact local binding at the intermediate trace position in the periphery of the embedded clause.

Strikingly, fragment movement does not increase the availability of LD antecedents for *ziji*. On the contrary, co-construal with the matrix subject was less preferred in fragments than in full answers. To capture this result, we propose that interpretive differences between *ziji* and *ta-ziji* are pragmatically motivated: when two potential antecedents are distinguished only by locality, reflexive choice takes on a disambiguating function, with *ta-ziji* signaling local binding and *ziji* signaling LD binding. (Note that this function does not fully determine interpretation, as both forms are compatible with both local and LD binding in full answers.) Because fragment movement eliminates the locality difference between potential antecedents, it also eliminates the basis of competition between *ziji* and *ta-ziji*, such that the interpretive preferences and possibilities for the two forms converge.

This proposal is supported by the finding from Chen et al. (2023) that robust differences in interpretive preferences for *ziji* and *ta-ziji* emerge late in acquisition. We conclude that the locality contrast long associated with the two reflexive forms is not grammatically fixed but, rather, arises from strategic use of these forms in ambiguous contexts. This sets the stage for future work to determine why the forms come to fill the functional niches they do as well as the time course for this change language development.

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