

A CUE-BASED APPROACH TO LONG-DISTANCE ANAPHOR BINDING IN L2 CHINESE

The issue: Is the long-distance interpretation of anaphors acquirable in an L2 (Chinese), if ruled out by the L1 (English)? We investigate sensitivity to two types of cue which determine anaphor resolution of the Chinese simple reflexive *ziji* (self): context and verb type. Chinese features 3 relevant semantic verb types: introverted/self-oriented verbs (henceforth **VT1**, e.g. *tanbai* in (1-a)) only allows local binding of *ziji* (*Lisi* in (1-a)); extroverted/other-oriented verbs (**VT2**, e.g. *huida* in (1-b)) only allows long-distance binding (*Zhangsan* in (1-b)); ambiguous/context-dependent verbs (**VT3**, e.g. *zhaogu* in (1-c)) allows both interpretations (local or long-distance: *Lisi* or *Zhangsan* in (1-c)), depending on the discourse context. In native speakers, contextual information has been claimed to have no impact on the interpretation of *ziji* with VT1 and VT2 [2].

Predictions: (**P1**) Variational Learning [3] predicts that learners should converge faster on the target value of the relevant parameter if the input provides reliable cues. This only obtains with VT2, as VT3 allows both local and long-distance binding. Protracted acquisition of the long-distance interpretation is predicted. (**P2**) [1] proposes that, contrary to native speakers (NS), non-native speakers (NNS) rely more on discourse cues than on structural cues in their interpretation of reflexives, and that this is due to differences in memory retrieval processes.

Questions: (**Q1**) Do NNS allow a long-distance (LD) interpretation? (**Q2**) Are NNS sensitive to structural cues (based on VT) as well as discourse cues? (**Q3**) Are structural and discourse cues weighted in the same way in NS and NNS?

Methods: 25 NS and 29 NNS read two-sentence sequences consisting of a context sentence (2) and a test sentence (1-a), and indicated their chosen antecedent for *ziji* in a forced-choice task. There were 90 sentence pairs in 6 conditions crossing Verb Type (VT1, VT2, VT3) and Context (Local, Long-distance). There were 90 distractors with the non-anaphoric pronoun *ta*. NNS' proficiency ranged from low intermediate to high intermediate, measured by a HSK Chinese proficiency test (Levels IV and V).

Results: Analysis was by Generalised Linear Model. (**Q1**) NNS allow the LD interpretation, but less than NS ($z = -6.78, p < 0.0001$); this only improves moderately with proficiency ($z = 1.83, p = 0.067$). (**Q2**) NNS are sensitive to discourse cues (with VT3, LD interpretation is more likely when required by the context: $z = 23.27, p < 0.0001$) and to structural cues (NNS allow LD interpretation more with VT2 than VT3, when required by the context: $z = 7.99, p < 0.0001$). (**Q3**) Here, we modelled Cue Choice as a dependent variable (i.e. Context or Verb Type) as a function of Conflict (i.e. long-distance interpretation required by the verb but local interpretation required by the context, or *vice versa*). VT3 was excluded as it does not impose verb type restrictions. The Figure and Table show that when there is a conflict between the cues, NS behave differently according to verb type: their preference for the structural cue is significantly stronger with VT2 than with VT1. In case of conflict, NNS always rely more on the context, independently of VT. Even with VT1, their reliance on the context is significantly higher than in NS.

Conclusion: The results are compatible with a probabilistic approach to parameter resetting (**P1**), and show that NNS rely more on discourse cues than structural cues (**P2**). Implications will be discussed.

- (1) a. Zhangsan_i rang Lisi_j tanbai ziji_{*i/j}.
 NAME ask NAME confess -self
 ‘Zhangsan asks Lisi to confess himself.’
 b. Zhangsan_i rang Lisi_j huida ziji_{i/*j}.
 NAME ask NAME answer -self
 ‘Zhangsan asks Lisi to answer him.’
 c. Zhangsan_i rang Lisi_j zhaogu ziji_{i/j}).
 NAME ask NAME take care of -self
 ‘Zhangsan asks Lisi to take care of him/himself.’
- (2) Lisi dui Zhangsan yinman zhenxiang.
 Lisi to Zhangsan conceal fact
 ‘Lisi conceals a fact to Zhangsan.’

Verb type	Cue	Native	Non-native
VT1	Context	48%	58%
	Verb Type	52%	42%
VT2	Context	28%	56%
	Verb Type	72%	44%

Table 1: Cue choice in case of conflict between the cues

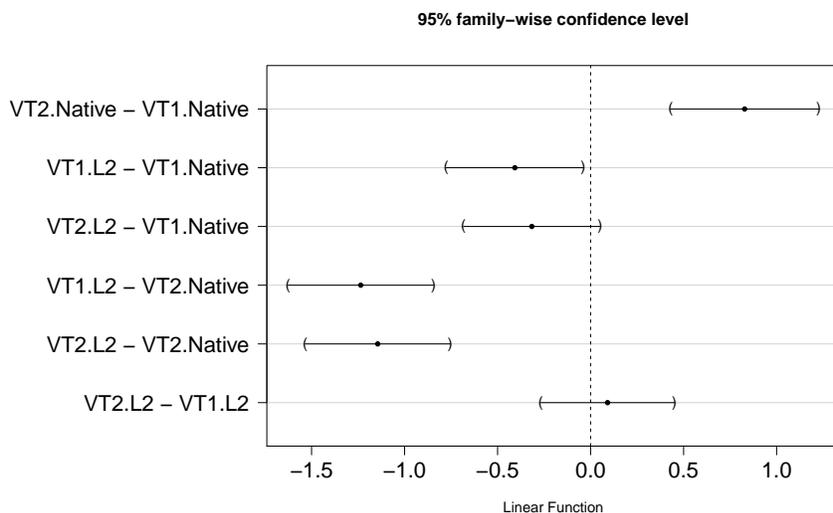


Figure 1: Tukey contrasts (with Bonferroni correction) comparing NS and NNS reliance on Verb Type (against Context). Intervals > 0 indicate a stronger reliance on Verb Type for the first term in the comparison (on the y axis), e.g. VT2.Native in the first comparison. Intervals < 0 indicate a stronger reliance on Context. Intervals crossing 0 indicate non-significant comparisons, i.e. no preference for either cue.

References

- [1] I. Cunnings. Parsing and working memory in bilingual sentence processing. *Bilingualism, Language & Cognition*, 2016.
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- [3] C. Yang. *Knowledge and Learning in Natural Language*. OUP, Oxford, 2002.