

Processing discontinuous predicates in Cantonese

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Introduction. Compound verbs in Cantonese are known to be different from V(erb)+O(bject) phrases in that they can take verbal suffixes in the form of $[\sigma_1\sigma_2-X]$ (cf. *VO-x). However, compound verbs may alternatively appear in a discontinuous form, i.e., $[\sigma_1-X-\sigma_2]$, where they are separated by verbal suffixes (=1)).

(1) Discontinuous predicates in Cantonese (cf. Chan and Cheung 2020, i.a.)

a. ${}^{OK}coet_{\sigma_1}\text{-zo-ban}_{\sigma_2}$ (cf. ${}^{OK}coet_{\sigma_1}\text{ban}_{\sigma_2}\text{-zo}$) “published, (lit.) out-PERF-plate” (VO-compound verb)

b. ${}^{OK}coet_{\sigma_1}\text{-zo-fat}_{\sigma_2}$ (cf. ${}^{OK}coet_{\sigma_1}\text{fat}_{\sigma_2}\text{-zo}$) “set off, (lit.) out-PERF-depart” (VV-compound verb)

(2) V(erb)+O(bject) phrases in Cantonese

${}^{OK}coet_V\text{-zo-gaai}_O$ (cf. $*coet_V\text{-gaai}_O\text{-zo}$) “went out, (lit.) out-PERF-street” (Verb+Object phrase)

Two competing analyses. (i) Reanalysis. Discontinuous predicates arise when a compound verb is structurally reanalyzed as a VO phrase (Chao 1968, Huang 1984, Her 2010 *i.a.*), such that (1) and (2) share the same VO-structure. (ii) Move+Delete. Based on evidence from disyllabic loanwords (verbs like *feilou* ‘fail’), Yip, Lee & Chan (2021) suggest that discontinuous predicates are resulted from syntactic verb movement (that create copies) plus partial/distributed deletion (e.g., *feilou-zo-feilou* ‘failed’). This implicates that discontinuous predicates in (1) are structurally distinct from the VP in (2).

Goal. Both analyses are built primarily on *retrospective data*. This talk probes the underlying structure of discontinuous predicates by examining the processing behavior of discontinuous predicates in Cantonese.

Design. We adopted a 2 (Separation: *with* (WS), *no* separation (NS)) x 3 (Structure: VP, VOComp(ound), VVComp/Loan) design, and ran a pilot self-paced reading experiment on Ixex Farm to measure the reading time of discontinuous predicates. In WS condition, the two syllables were separated by the aspect marker *zo*. Both factors are within-subject. Participants (n=20) read 72 target and 72 filler sentences which were randomized and presented in two blocks. Each sentence was followed by a comprehension question.

Results. (i) The mean reading time of the second syllable (i.e., σ_2) of the target words is given in Fig. 1. A linear mixed model was built with the fixed factors *Separation* and *Structure*. **No significance** was found for the main effects of *Separation* ($p = .697$) and *Structure* ($p = .542$), neither did their interaction ($p = .621$). (ii) The accuracy rate of the comprehension questions shows a **significant** interaction for *Separation* x *Condition* ($F(2, 2855) = 5.772, p = .003$). Post-hoc analysis reflects a **lower accuracy rate** for VP compared to VOComp in WS condition (est = $-.070$, SE = $.022, t = -3.231, p = .004$).

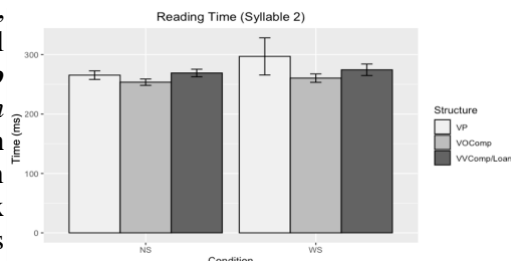


Fig. 1: The mean reading time of the second syllable

Discussions. (i) Processing VP:WS and other structures lack significant difference, which is unexpected under Reanalysis, as it predicts VP to be faster without the extra reanalysis process. (ii) Furthermore, the lack of difference in reading time between VVComp/Loan and VOComp further reflects that the two types involve the same mechanism. Under Reanalysis, VVComp/Loan are different from VOComp. The former requires an extra step of categorial reanalysis of σ_2 ($V/\text{non-morpheme} \rightarrow N \rightarrow NP$) whereas the latter only changes the phrase structural status ($N \text{ morpheme} \rightarrow NP$). Under Move+Delete, VOComp and VVComp/Loan are not differentiated, and they all undergo the same process. The lack of difference in reading time thus supports Move+Delete over Reanalysis. (iii) The lower accuracy rate for VP:WS suggests difficulties in retaining the information under similar reading speed (i.e., no significant difference in reading time). This implies that the object/ σ_2 was encoded differently in VP and VOComp, lending potential support to the structural difference suggested in the Move+Delete approach, i.e., discontinuous predicates are head structures rather than VO phrases.

Implications. (i) We offer *novel psycholinguistic evidence* for Move+Delete, which aligns with the linguistic evidence reported in Yip, Lee & Chan (2021). (ii) Since Reanalysis should be correlated with a longer processing time in VOComp and VVComp/Loan, a Mandarin counterpart of this experiment may provide further evidence for *parametric variations* between Cantonese and Mandarin.