The Cantonese dative constructions: implications for processing - Antonio Cheung

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Background on Cantonese

<table>
<thead>
<tr>
<th>(1a) Basic word order SVO:</th>
<th>(1b) Prenominal relative clauses [RC NNP]:</th>
<th>(2) Canonical dative: Double Object Construction (DOC)</th>
<th>(3) BA construction in Cantonese (BA word in Cantonese: zoeng1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ngo5 ze3 cin2 1Sg borrow money</td>
<td>[ngo5 ze3 ge3 _] cin2 1Sg borrow PRT money</td>
<td>ngo5 [be2 cin2 nei5] 15g give money 2Sg</td>
<td>ngo5 [zoeng1 cin2 [be2 nei5]] 1Sg [BA money [give 2Sg]]</td>
</tr>
<tr>
<td>‘I borrow money.’</td>
<td>‘The money (that) I borrowed’</td>
<td>‘I give you money.’</td>
<td>‘I give you money.’</td>
</tr>
</tbody>
</table>

Center-embedding with SVO and RelN

(4a) 個細路仔[畀咗佢借緊嗰本得意嘅書][個先生]

[go3 sai3lou6zi2] be2.zo2 [keoi5 ze3.gan6 go2 bun2 dak1ji3 ge3 syu1] [go3 sin1saang1]
[CL child] give.PFV [3Sg borrow.PRG Det CL funny Prt book] [CL teacher]

"The child has given the teacher the funny book that he is borrowing"

(cf. ‘The boy [who the girl [that Peter knows] lives next to] is tall.’ Long processing domain for S node (underlined))

Typological survey (Dryer, 2005)

<table>
<thead>
<tr>
<th>Languages</th>
<th>RelN</th>
<th>NRel</th>
</tr>
</thead>
<tbody>
<tr>
<td>OV</td>
<td>109</td>
<td>96</td>
</tr>
<tr>
<td>VO</td>
<td>5</td>
<td>370</td>
</tr>
</tbody>
</table>

VO + RelN causes center-embedding and is avoided by languages

→ center-embedding is difficult to process (e.g. Hawkins, 2004; Gibson, 2000)

→ Challenge to psycholinguistics: if languages are optimized for processing, why do these languages preserve this configuration? → Cantonese is good testing ground


(4b) [go3 sai3lou6zi2] be2.zo2 [keoi5 ze3.gan6 go2 bun2 dak1ji3 ge3 syu1] be2 [go3 sin1saang1]
[CL child] give.PFV [3Sg borrow.PRG Det CL funny Prt book] [CL teacher]

(4c) [go3 sai3lou6zi2] zoeng1 [keoi5 ze3.gan6 go2 bun2 dak1ji3 ge3 syu1] be2.zo2 [go3 sin1saang1]

Both: "The child has given the teacher the funny book that he is borrowing"

BA-construction in Cantonese (‘Disposal construction’)(see example 4c)

Semantic limitations: abstract/concrete motion only, definite theme NP, etc.
Syntactic limitations: main verb cannot be simple predicate (has to be e.g. modified with suffix)
Low frequency in Cantonese.

→ Poor performance predicted for the processing (comprehension and production) of the BA construction

Minimize Domains (Hawkins, 2004)

Head nouns closer to V in the BA construction should facilitate processing
See verb and head nouns (in bold) and underlined lexical domain for the main verb.

Maximize On-line Processing (Hawkins, 2004)

BA word assigns Theme to the NP early.

→ Better performance predicted for the processing of the BA construction

Experiment (Dual task: Self-paced moving-window reading and elicited imitation)

Participants: 18 Cantonese native speakers

Variables: construction (DOC and BA); Theme complexity (unmodified Theme, Adj-modified Theme, RC-modified Theme) Dual task: Masked self-paced moving-window reading (comprehension) and elicited imitation (production)

In each trial the participant press a key to see the next word unmasked (window size: 1 word), after items there is a probe “Repeat” to elicit reproduction of the previously shown sentence. Probe and comprehension questions for fillers.
Sample set of items (all 6 conditions):

**DOC [T]:**

[go3 sai3lou6zai2] beizi2.zo2 [go2 bun2 syu1] [go3 sin1saang1]

[CL child] give.PFV [Det CL book] [CL teacher]

**BA [Adj T]:**

[go3 sai3lou6zai2] zoeng1 [go2 bun2 syu1] beiizi2.zo2 [go3 sin1saang1]


**DOC [Adj T]:**

[go3 sai3lou6zai2] beiizi2.zo2 [go2 bun2 dak1ji3 ge3 syu1] [go3 sin1saang1]

[CL child] give.PFV [Det CL funny Prt book] [CL teacher]

**BA [Adj T]:**

[go3 sai3lou6zai2] zoeng1 [go2 bun2 dak1ji3 ge3 syu1] beiizi2.zo2 [go3 sin1saang1]


**DOC [RC T]:**

[go3 sai3lou6zai2] beiizi2.zo2 [keoi5 ze3.gan6 go2 bun2 dak1ji3 ge3 syu1] [go3 sin1saang1]

[CL child] give.PFV [3Sg borrow.PRG Det CL funny Prt book] [CL teacher]

**BA [RC T]:**

[go3 sai3lou6zai2] zoeng1 [keoi5 ze3.gan6 go2 bun2 dak1ji3 ge3 syu1] beiizi2.zo2 [go3 sin1saang1]


Results

<table>
<thead>
<tr>
<th>Average RT (ms)</th>
<th>[T]</th>
<th>[Adj T]</th>
<th>[RC T]</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOC</td>
<td>407.55</td>
<td>398.44</td>
<td>438.25</td>
</tr>
<tr>
<td>BA</td>
<td>387.34</td>
<td>389.97</td>
<td>422.59</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Accuracy %</th>
<th>[T]</th>
<th>[Adj T]</th>
<th>[RC T]</th>
</tr>
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<tbody>
<tr>
<td>DOC</td>
<td>80.56%</td>
<td>72.22%</td>
<td>54.17%</td>
</tr>
<tr>
<td>BA</td>
<td>95.83%</td>
<td>94.44%</td>
<td>86.11%</td>
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</table>

Effects of **weight** (comp p=0.040; prod p<0.001) and **construction** (comp p=0.024; prod p<0.001)
The **BA-construction** is found to be **read faster** in the masked self-paced reading task, and is **imitated more accurately** than the canonical construction in the elicited imitation task.

Summary

Alternative constructions facilitates processing and may be part of the reason Cantonese retains a typologically rare word-order configuration. Support for processing principles in Hawkins (2004)

Key references

