## Processing Japanese subject and object relative clauses by advanced learners: Comparison with native speakers by a whole-sentence reading experiment

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### INTRODUCTION

- Subject relative clauses (SRCs) are easier to process than object relative clauses (ORCs) in many languages (both in L1 and L2).
- Recent studies from Asian languages have argued that Structural Distance Hypothesis accounts for the processing asymmetry between SRCs and ORCs.

![Structural Distance Hypothesis (SDH)](image)

The number of syntactic nodes between a filler and a gap determines the processing difficulty of RCs (O’Grady, 1997; Hawkins, 1999).

### EXPERIMENT 1

**Aim:** To examine whether advanced learners of Japanese process SRCs faster than ORCs in Japanese, as predicted by SDH.

**Participants:** 21 advanced Chinese-speaking learners of Japanese (CLJ) from Hiroshima University

- 19 of them have 1st level of JLPT
- Living in Japan for 3 to 13 years (avr = 7 years; SD = 2.19)

**Materials:**

<table>
<thead>
<tr>
<th>SRC</th>
<th>ORC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensei-o mita gakusei-wa tabako-o sutte-ita.</td>
<td>Sensei-ga mita gakusei-wa tabako-o sutte-ita.</td>
</tr>
<tr>
<td>Teacher-ACC saw student-TOP cigarette-ACC smoke-Past PROG</td>
<td>The student who saw the teacher was smoking a cigarette.</td>
</tr>
</tbody>
</table>

**Procedure:**

- Participants were instructed to answer YES-NO questions.
- Sentences were presented by Linger 2.94 (by Doug Rohde);
- Answer of target sentences was YES;
- Participants were either elementary or intermediate.

**RESULTS**

<table>
<thead>
<tr>
<th>Data trimming:</th>
<th>Accuracy 2 items &amp; participants &lt; 65%; RT 2.5 SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall accuracy: SRC = 83% &amp; ORC = 88%</td>
<td></td>
</tr>
</tbody>
</table>

**DISCUSSION**

- The results are consistent with previous studies in L2 & L1
- SDH accounts for this result

### EXPERIMENT 2

**Aim:** To examine how NSJ process sentences used in EXP 1, and to compare CLJ with NSJ.

**Participants:** 24 university student from Hiroshima University

- Living in Japan for 6 months to 7 years (avr = 3 years; SD = 2.61)
- Learning Japanese for 3 to 13 years (avr = 7 years; SD = 2.19)

**Materials:**

<table>
<thead>
<tr>
<th>SRC</th>
<th>ORC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gakusei-ga/wo mita-nowa sensei desu ka?</td>
<td>Gakusei-ga/wo mita-nowa sensei desu ka?</td>
</tr>
<tr>
<td>Teacher-ACC saw student-TOP cigarette-ACC smoke-Past PROG</td>
<td>The student who saw the teacher was smoking a cigarette.</td>
</tr>
</tbody>
</table>

**Procedure:**

- Participants were asked to compare CLJ with NSJ.
- The number of syntactic nodes between a filler and a gap determines the processing difficulty of RCs (Otth, 2007).

**RESULTS**

<table>
<thead>
<tr>
<th>Data trimming:</th>
<th>Accuracy 2 items &amp; participants &lt; 65%; RT 2.5 SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall accuracy: SRC = 88% &amp; ORC = 88%</td>
<td></td>
</tr>
</tbody>
</table>

**DISCUSSION**

- This result is contrary to previous studies & EXP1
- This result cannot be explained by SDIH

**GENERAL DISCUSSION**

- L2 learners cannot process sentences as native speakers do (Clashen & Felser, 2006)
- Only the processing difficulty of RCs, but also processing time differs between learners and native speakers
- Lack of automaticity (Segalowitz, 2003)
- Chinese (L1) did not influence CLJ’s performance in Japanese (L2) (Felser et al., 2003; Kanno, 2007; Pappalopoulou & Clashen, 2003)
- ORCs are easier to process than SRCs in Chinese (Hoiao & Gibson, 2003)
- Structural distance between the filler and the gap might not be the sole factor that determines the processing difficulty of RCs
- Task might have also an impact on the processing of RCs

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