Evidence from the Processing of Subject and Object Clefts in Japanese

Baris KAHARAMAN, Atsushi SATO, Hajime ONO, Hironu SAKAI
(1) Hiroshima University, (2) Japan Society for the Promotion of Science, (3) Kinki University
Correspondence: barisav@gmail.com (Baris Kaharaman)

INTRODUCTION

BACKGROUND

FILLER-GAP DEPENDENCIES

The teacher who [the student saw] was young.

 Filler-gap dependencies are processed incrementally.

GAP-FILLER DEPENDENCIES

A dependency in which the gap precedes the filler such as relative clauses (RCs) in head final languages (Kwon, 2008).

 Are the gap-filler dependencies also processed incrementally?

- It is assumed that the processing asymmetry between subject and object relative clauses (SR / OR) reflects the relative ease / difficulty of establishing a filler-gap dependency (e.g. Gibson, 1998; O’Grady, 1997).

- It is conceivable that the observed position of the processing asymmetry indicates that the formation process of a gap-filler dependency has taken place at that position.

PREVIOUS STUDIES

- In head-final languages the processing asymmetry of SR and OR was observed at different positions:

  Korean: RC-verb & filler (Kwon, 2008)
  Turkish: RC-verb (Kahraman et al, 2010)
  Japanese: Filler (e.g. Ishizuka, 2005)

 Japanese RCs are structurally ambiguous between a matrix clause and a subordinate clause at RC-verb.

 Since the Japanese parser cannot determine whether a filler will appear, it might not have established a gap-filler dependency until the filler appears.

 What if the parser predicts the upcoming filler earlier?

EXPERIMENTS

EXPERIMENT 1

Aim: To test whether there is a processing asymmetry between SCs and OCs. If so, where is the processing asymmetry observed?

Participants: 36 native speakers of Japanese at Hiroshima University.

Materials: 30 set of SCs & OCs + 80 fillers

Predictions: If there is no problem with items, SRs should be read faster than ORs at the head-noun (e.g. Ishizuka, 2005; Miyamoto & Nakamura, 2003; Ueno & Gamsey, 2008).

RESULTS

- The head-noun of SRs was read faster than that of ORs.

- We replicated the previous studies in Japanese (e.g. Ishizuka, 2005).

- Our test items are reliable.

GENERAL DISCUSSION

- Processing ease of RCs and clefts cannot be explained by the same structural factors (i.e. Structural distance).

- Why does the processing ease of RCs and clefts differ in Japanese?

POSSIBLE FACTORS:

1) Discourse function of RCs (topic) and clefts (focus) might be related to their processing ease (Roland, 2009).

2) Frequency of SRs vs. ORs & SCs vs. OCs might be different (Real & Christiansen, 2007).

3) Prediction for the upcoming structures at the embedded verb might be different between RCs and Clefts (Hale, 2006; Levy, 2008).

- In the future studies, we will attempt to explain possible factors.

CONCLUSIONS

- In addition to the filler-gap dependencies, the gap-filler dependencies are also processed incrementally (e.g. Aoshima et al., 2004; Stowe, 1996).

- The use of cleft-marker would be an important source for the incremental processing of gap-filler dependencies (Kaharaman et al., 2007).

ACKNOWLEDGEMENT: This research was supported by (1) Grant-in-Aid for Scientific Research (B) (Neurocognitive basis for language learning through the processing of input and output) (Hiromu Sakai, 26380066); (2) Grant-in-Aid for Scientific Research (B) (Evaluating the effectiveness of language education by using objective and subjective measures) (Kaharaman); (3) Grant-in-Aid for Young Scientists from the MEXT (Placing a significance on the role of eye movements).