Abstract

This paper presents an account of a curious and ill understood phenomenon of L1 Acquisition concerning Only (Crain et al. 1992, 1994). Patterson et al. 2003, 2006, among others). Our account is based on the assumption that Only always triggers a scalar presupposition as well as on Fox & Katzir's (2011) mechanism for generating the set of alternatives relevant for the interpretation of Only. In support of our account, we present experimental evidence indicating that the factors identified by our account do indeed modulate children's success in interpreting sentences with Only.

Previous studies and Questions

Crain et al. (1992, 1994)

Children up to at least age 6 display a surprising difficulty understanding sentences with pre-subject Only.

(P1) 

(1a.) Only the cat is holding a flag.

(1b.) Only the dinosaur is painting a house.

21 out of 38 children (age 3 to 6) said YES to (1a) for (P1), and also YES to (1b) for (P1). They call them VP-oriented children. Among those VP-oriented children, 3 out of 6 (4: 4/5) said NO to (2) for a picture where a dinosaur is painting a house and a chair and a flying kite, with clear justifications indicating VP-orientation.

Children associate Only with VP, wherever it attaches to.

1. Why do children find sentences with pre-subject only in situations like those described above difficult to understand?

2. Why do they mistake them to mean sentences with only taking VP scope would mean?

Hypothesis

Constructing a suitable set of alternatives that are necessary for interpreting Only requires restructuring the default question under discussion (QUD) in cases like (1a). This is difficult for children. Children tend to construe Only as taking the object as associate because a suitable set of alternatives in the object position can be constructed without having to restructure the QUD.

Experiments and Results

Experiment 1: Agent- vs. Theme-based introduction

Design: Two types of introductions; Agent-based, and Theme-based. 4 pre-subject Only, 4 VP Only and 4 filler sentences are produced by a puppet for children to judge in each condition. Animations on a computer screen.

Subjects: 3-to-8-year-olds (N=40, N=86)

Method: Truth Value Judgment Task. Agent- and Theme-based was a between-subject factor.

| P2 | Agent-based animation |
| P3 | Theme-based animation |

“Look, the elephant got cake and jellies.”

“Look, the elephant and the horse got jellies.”

We excluded yes-sayers (N=3), a no-sayer, those who did not complete the experiment (N=3), and a subject who answered 3 or more filler items wrong.

Conclusions

The theme-based introduction increased the population that consistently associates Only with the subject. This suggests that the Theme-based introduction indeed helps children to construe relevant Alt(S) in pre-subject Only sentences, and interferes with Alt(S) in pre-verb Only sentences.

Patterson et al. (2003, 2006)

In Patterson et al. (2003), they conducted Picture Verification task (N=72) and Picture Selection Task (N=74) with children aged 6 to 12. They tested sentences such as (3).

(3a.) The fireman is holding a house.

b. Only the fireman is holding a house.

c. The fireman is only holding a house.

Children showed lots of “no scope” responses, regardless of what Only associates with. They conclude that children seem to just ignore Only.

In Patterson et al. (2006), they do not argue that children ignore Only, but point out that they have preference to associate preverbal Only with the VP, rather than the direct object.

Notley et al. (2009)

Findings from two English-speaking 2-year-old children supported Crain et al.'s results. The same trend was found in the results from 20 Mandarin-speaking 4-year-old children.

Scalar Presupposition and the Generation of Alternatives in the Acquisition of Only

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Experiments and Results

Experiment 1 – Numeral subject introduction

Design: Agent-based introduction. 4 pre-subject Only and 4 filler sentences are produced by a puppet. The same animations as the Agent-based condition of Experiment 1 on a computer screen. An example of the target sentences is “Only one of the animals got candy.”

Subjects: 3-to-8-year-olds (M: 5.2, N:50)

Method: Truth Value Judgment Task. We excluded yes-sayers (N=3), no-sayers (N=2) and a subject who did not complete the experiment.

Conclusion

Children tested with Experiment 2 were significantly better than the children tested with Agent-based introduction in Experiment 1 regardless of the age. This suggests that children knew that the scalar presupposition must be met in Only 5, and that inherently scalar items can satisfy it, while non-scalar items do not.

Scalar Presupposition and default QUD

The question we ask the puppet can be understood in two ways.

“Can you tell us what happened, puppet?”

<table>
<thead>
<tr>
<th>QUD</th>
<th>What did animal (e.g. the cat) get?</th>
<th>Who got object (e.g. ice cream)?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Congruent answer</td>
<td>The cat only got [ice cream]</td>
<td>Only [the cat] got ice cream.</td>
</tr>
<tr>
<td>Incongruent answer</td>
<td># Only the cat got [ice cream]</td>
<td># The cat only got [ice cream]</td>
</tr>
</tbody>
</table>

Proposal

Adult speakers can restructure the QUD upon experiencing presupposition failure and access the other QUD, while children have relative difficulty. Children resort to the context to enrich Alt(S). I.e., Under the default QUD “got ice cream and juice” is generated instead of adult-like “the goose and the cat got ice cream.”

- Children do not yet know that pre-subject Only can find its associate only on or inside the subject (a language specific property of Only).

- To satisfy the scalar presupposition, children choose the object as associate of Only.

- Adults have learned that pre-subject Only can only associate with the subject; they restructure the QUD to generate suitable alternatives.

Predictions

i. If children are introduced to a situation with theme-based descriptions, the performance with pre-subject Only will become better, since the introduction helps them to construe relevant Alt(S), which will satisfy the scalar presupposition of pre-subject Only sentences.

Also, it is predicted that the performance with pre-verbal Only will become worse with theme-based introduction, since there is a discrepancy between the Alt(S) that has to be generated and the Alt(S) that can be easily generated under the QUD “For each object, sujet got?”

ii. If the associate is an inherently scalar item, the performance will become worse, since scalar presupposition is met and the restructuring of the QUD is not necessary.

Experiment 2

- Experiment 2

- Experiment 1