Asymmetries in Children's Negative Determiner Production

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A subject-object asymmetry in German-speaking children's negative determiner production supports the silent concord analysis of German/English/... negative determiners.

Introduction

Languages vary in how they express non-existence:

- ***German:*** Negative determiner or silent negation (¬).

(1) **Keiner** hilft ¬ Janek. — Janek hilft ¬ **keinem**.
anybody helps **not** Janek — Janek helps **not anybody**

- ***Russian/Polish:*** Negative determiner and sentential negation

(2) **Nikt** **nie** pomaga Janek. — Janek **nie** pomaga **nikomu**.
anybody not helps Janek — Janek **not** helps **anybody**.
"Nobody helps Janek." — "Janek doesn't help anybody."

Analyses for German/English negative determiners:

- ***Negative quantifier analysis:*** Negative determiner is a **generalised quantifier** (Barwise & Cooper, 1981; de Swart, 2000).
  - *Prediction:* **Less** complex to derive in **subject** position, due to **no type-mismatch** (Heim & Kratzer, 1998).
- ***Silent concord analysis:*** Negative determiner is a **positive indefinite** that indicates the presence of a **silent sentential negation** (Bech, 1955; Zeiljstra, 2004; Penka, 2011).
  - *Prediction:* **More** complex to derive in **subject** position, due to need for **reconstruction**.

Research Question: Does **children's production** of **negative determiners** in **subject** position provide any **insight** to these **competing** analyses?

Experiment

Nineteen children (3,0-6;2, M = 4;9) and **15 adults** played a game in which they had to **describe** a series of **pictures** that varied with regard to **how many** of the cats were **wearing hats** (Fig. 3). The 0/24 condition picture (Fig. 1) was designed to elicit **negative determiners**. The experiment was **designed** to prime **subject** position **negative determiners**.

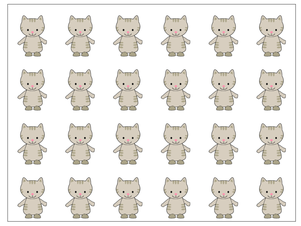

Fig. 1: The '0/24' condition picture.

Results

From the '**0/24**' condition (i.e. Figure 1) we elicited **57** utterances from **children** and **45** utterances from **adults**. Of these, **27** utterances from each group contained a **negative determiner** (kein) that could be clearly **identified** as being in **subject/object** position (the others largely included 'without', see (5)).

Our **analysis** of these sentences revealed a **striking difference** between adults and children with regard to the **position of the negative determiner**. Specifically, as **Figure 2** shows, we found that while **adults** tended to produce the negative determiner in the **subject** position (as in (3)), **children** tended to produce it in the **object** position (as in (4)).

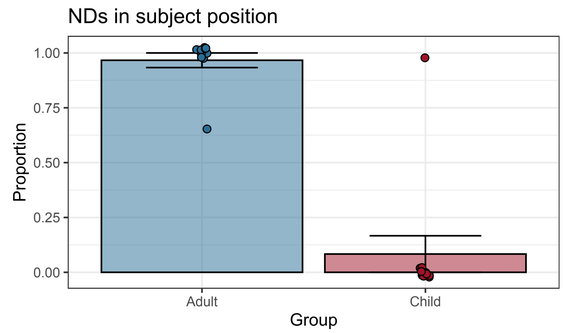

Fig. 2: Mean productions of negative determiners in subject position. Dots represent individual participants.

(3) **Keine** Katze hat einen Hut.
No cat has a hat.
'No cat has a hat.'

(4) Alle Katzen haben **keinen** Hut.
All cats have no hat.
'All of the cats have no hat.'

This difference was confirmed to be statistically significant by a **mixed-effects logistic regression** which found a **significant** effect of **group** ($\chi\hat{2}(1) = 28.44$, $p<0.001$).

Conclusion

- **Result:** Subject-Object **asymmetry** in children's **production** of **negative determiners**.
- **Implications:**
  - According to the **silent concord** analysis, producing the negative determiners in the **subject** position requires **reconstruction**. **Assuming** children find such reconstruction **difficult**, this could explain the identified **asymmetry**.
  - It is **unclear** how the **negative quantifier** analysis could **account** for this **asymmetry**.

References

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Appendix

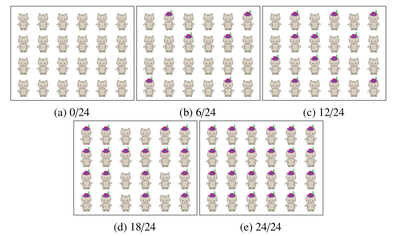

Fig. 3: Full set of iPad pictures seen by participants.

(5) Alle Katzen sind ohne Hüte.
All cats are without hats.
'All the cats are without hats.'