

Implicatures in Production: Informativity vs. Effort

Introduction For comprehension, it is well-established, that children are less sensitive to pragmatic implicatures than adults (Noveck 2001, Bott and Noveck 2004, Pouscoulous et al. 2007, Huang and Snedeker 2009, Katsos et al. 2011, among others). For production, however, there have been mixed results (Engelhardt et al. 2006, Davies and Katsos 2010). Based on previous research (Sauerland & Yatsushiro; henceforth, S&Y), our Short Term Collaboration Program (*New experimental approaches to the Maxim of quantity*) try to explain why adults overinform in certain context.

Previous Study: Sauerland & Yatsushiro It is well-known that object relative clauses are difficult to comprehend for both adults and children. Novogrodsky and Friedmann (2006) and Belletti (2014) observe that children use different strategies to avoid producing object relatives. One such method is passivization (Belletti 2014). There are two types of passives in many languages: with and without “by-phrase”((1)). German has both types of passives, and the expression of the agent is optional, as the grammaticality of (1b) shows.

- (1) a. Das Mädchen wird von dem Papa geküsst.
the.Neut girl become.3rd.sing by the.Masc.Dat Papa kiss.part
‘the girl is kissed by the father.’ **Full Passive (FP)**
- b. Das Mädchen wird geküsst.
the.Neut girl become.3rd.sing kiss.part
‘the girl is kissed.’ **Short Passive (SP)**

S&Y propose that two pragmatic principles govern the choice between (1a) and (1b). For concreteness, we adopt the principles of Grice (1989): *Informativity* (Quantity 1) prefers the more informative full passive over the short passive; *Brevity* favors the short passive over longer full passive. We consider two different discourse contexts, both characterized by a question under discussion. In (2a) (“*Informativity* \gg *Brevity*”), informativity applies and outranks brevity. In (2b) (“*Brevity*”), informativity is irrelevant because the agent is given, and only brevity applies.

- (2) a. Did the father or the grandfather kiss the girl? (***Informativity* \gg *Brevity* Context**)
b. Did the father kiss or hug the girl? (***Brevity* Context**)

Prediction If children are not sensitive to informativity (as suggested by comprehension studies on scalar implicatures), children should use short passives in the long-passive contexts ((2a)).

Adults, on the other hand, should produce the full passive in the *Inf.* \gg *Brevity* context but not in the *Brevity* context where full and short passives do not differ in their informativity.

Method An elicitation experiment of relative clauses based on Novogrodsky and Friedmann (2006) was conducted. The experimenter told stories about two girls/boys (depending on the gender of the participant). At the end of each story, children were asked to choose which one they’d rather be and answer as follows:

- (3) Ich möchte lieber das Mädchen sein,
I would like.more the girl be,
‘I would rather be the girl ...’

Two example stories for *Inf.* \gg *Brev.* and *Brevity* contexts are shown in (4). We used five contexts of each type. The three kinds of responses targeted by our design are shown in (5).

The children were expected to produce passive sentences with high frequency because object relative clauses are difficult for 5-year-olds (Novogrodsky and Friedmann 2006).

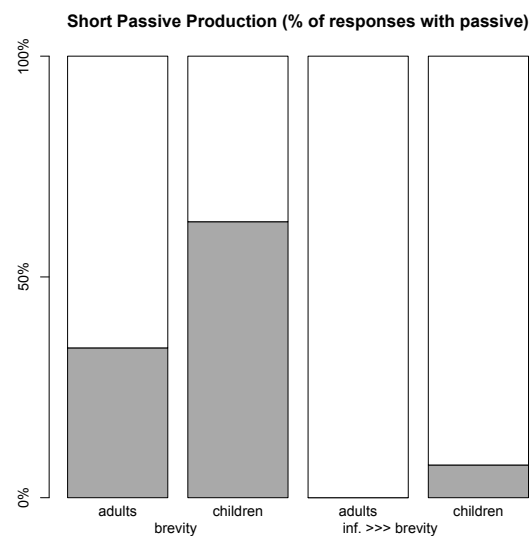
- (4) a. an example of Inf. \gg Brevity context:
The father kisses one girl, and the grandpa kisses one girl. Which girl would you rather be? Start with, 'I'd rather be the girl ...'.
- b. an example of Brevity context:
The father hugs one girl and the father kisses one girl. Which girl would you rather be? Start with, 'I'd rather be the girl ...'.
- (5) a. the girl that the mother kissed (object relative clause)
 b. the girl that was kissed by the mother (full passive)
 c. the girl that was kissed (short passive)

Subjects A total of 20 adults and 20 monolingual German speaking children (5;1–5;11, mean = 5;6, 9 girls, 11 boys) living in Berlin participated in this study.

Results and Discussion: A total of 200 child-responses and 200 adult-responses were collected. 51 child-responses and 121 adult-responses had a passive form. The graph in (6) shows for both groups the percentage of short passives used out of all passives in the two contexts. As predicted, the adults produced short passives only in the *Brevity*-context (Fisher's exact test [FET]: $p < 0.05$) showing the expected effect of informativity. The children also show sensitivity to *informativity* (FET: $p < 0.05$), however, they produced some under-informative short passives. There was a significant difference between children and adults (chi-square with pooling, $p = .021$), which refutes the null hypothesis and shows that children exhibit **lower** sensitivity to informativity than adults. Most surprisingly, children showed a significantly stronger preference for the short passive in the *brevity*-context than adults (FET: $p = 0.026$). Engelhardt et al. (2006) show that adults are not

highly sensitive to *brevity*. Our results indicate that children show **higher** sensitivity to *brevity* than adults.

(6)



Goal of the project

- Replicate the result in English, using Mechanical Turk.
- The original study used awkward phrasing (repetition of *Papa*, for example), and check whether this contributed to overinforming.
- Use Rating study: We will check whether the speakers punish the overinformativeness of by-phrase in *Brevity* context in comprehension, and use Rating study.

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