

## Children's comprehension and production of lexical and subcategorized prepositions

In generative theories of syntactic categorization different types of prepositions are distinguished, for instance, lexical and subcategorized (examples 1 & 2) [1]. German-speaking children's spontaneous speech data suggests that lexical prepositions are acquired first and followed by subcategorized ones and that children produce incorrect substitution of the latter up to age 7 (Grimm, 1975). Can this outcome be supported by experimental data? Do children indeed acquire these two types of prepositions differently? We investigated this question in the comprehension and production tasks in children and adults as a control group. We hypothesized that children master lexical prepositions better than the subcategorized one. Specifically, on the comprehension task they would identify sentences with incorrect lexical prepositions more often than sentences with incorrect subcategorized prepositions. In the production task, more substitutions and omissions were expected for subcategorized prepositions than for the lexical ones. We expected this trend to decrease with age.

To this end, comprehension and production of the same prepositions in lexical and subcategorized functions were investigated (1 & 2). Twelve frequent mono-syllabic prepositions (*auf* "on", *nach* "after", *von* "from", *mit* "with", *an* "on", *zu* "to", *für* "for", *um* "at", *in* "in", *aus* "from", *vor* "for", *bei* "at") were used. Twenty four German-speaking children of 6;10 – 12;06 yrs (mean 10;03 yrs) and 30 (18 – 30yrs) adults participated. Comprehension was tested with an auditory sentence judgment task in which half of the experimental sentences contained an incorrect preposition (given the context) (example 1 & 2). In total, 246 sentences including fillers were used.

1. Der Opa zeigt *auf/ \*für* einen Berg. (Subcategorized)  
the<sub>NOM</sub> grandpa shows *at/ for* a<sub>ACC</sub> mountain  
"The grandpa is pointing *at/ \*for* the mountain."
2. Die Oma hält die Katze *auf/ \*nach* einem Arm. (Lexical)  
the<sub>NOM</sub> grandpa hold the<sub>ACC</sub> cat *on/ after* an<sub>DAT</sub> arm  
"The grandma is holding the cat *on/ \*after* one arm."

Production was tested in a contrastive elicitation task. The experimenter prompted participants by first describing a picture herself. This was done to direct participants to using prepositions rather than possible alternative structures (see Figure 1).

Statistical analyses revealed that accuracy on *comprehension* was better in adults than in children ( $p < .001$ ) (Figure 2). Accuracy was influenced by age in children (performance improved with age) ( $p = .03$ ). Furthermore, we found an effect of preposition type – sentences with lexical prepositions had better accuracy results ( $p = .01$ ). This preposition type effect interacted with age ( $p = .02$ ) (Figure 3).

Similarly, children were outperformed by adults in the *production* experiment ( $p = .014$ ). Children's production was characterized by more omissions and incorrect substitutions of prepositions than that of adults. Unlike for comprehension, for production no clear difference between lexical and subcategorized prepositions emerged (Figure 2).

Our hypothesis that children, especially younger ones, have not yet reached the adult-like performance on prepositions was confirmed. Furthermore, comprehension of lexical prepositions was better than of subcategorized ones. In general, our results of differences in the acquisition of lexical vs subcategorized prepositions indicate that these two types of prepositions indeed represent two different syntactic categories.

### References:

- [1] Corver, N., & van Riemsdijk, H. C. (2001). Semi-lexical categories. *Semi-lexical categories*, 1-19.
- [2] Grimm, H. (1975). On the child's acquisition of semantic structure underlying the wordfield of prepositions. *Language and Speech*, 18(2), 97-119.

