Quantifier Acquisition: presuppositions of "every"

The acquisition of determiners has been investigated quite intensively since 60s (Inhelder & Piaget (1964), Philip (1995), etc.). Of the three components of the determiner meaning—truth conditions, implicatures, and presuppositions, studies have focused almost exclusively on the truth conditions of the English determiner “every” in acquisition research. In this talk, I present data from an experiment, focusing on a different component: children’s understanding of presuppositions associated with “every”.

Heim (1991) proposes that there are two types of presuppositions: inherent and implicated. According to her theory, inherent presuppositions are encoded in the lexicon, while implicated presuppositions are derived using a mechanism used for scalar implicature interpretation. This makes the following prediction: the acquisition path of the implicated presuppositions and scalar implicatures should pattern together. This talk shows that the prediction is borne out.

Theoretical background When a speaker says (1a), the implicatures in (1b) obtains, because the fact that the speaker did not say (1c) implies that (1c) and the actual world are not compatible.

(1) a. Some children are 5 years old.
   b. Not all children are 5 years old.
   c. All the children are 5 years old.

According to Heim’s (1991) theory, we find a similar pattern with presuppositions. For adult speakers, (2b) sounds odd, because it sounds as if the victim has more than one biological father. This is so because by using (2b), the speaker is implicating that (2a) is not compatible with the actual world.

(2) a. I interviewed the biological father of the victim.
   b. I interviewed every biological father of the victim.

Every has lexical existence presuppositions (the first argument of every must not be an empty-set; EP), and implicated anti-uniqueness presupposition (the argument of every must not be a singleton-set; AUP) (Sauerland (2003)). Heim’s theory predicts that AUP patterns with implicatures, not with EP.

Experiment: Felicity Judgment Task We conducted felicity judgment task with sentences with jeder ‘every’ and einige ‘some’.

Participants 22 5-year-old (mean age 5;6), 30 6-year-old (mean age 6;5), 30 7-year-old (mean age 7;5), 30 8-year-old (mean age 8;5) monolingual German children and 21 monolingual German adults (mean age 24;2) have participated in this study so far.

Materials and Procedure We showed each subject a series of 23 pictures. For each picture, two alternatives were given to the subject. The child was asked to reward the puppet who said it better. There were 5 each of 3 types of target sentences.

(3) a. some vs. all: (in English)
   i) ‘Some chipmunks are waking up.’
   ii) ‘All the chipmunks are waking up.’

b. jeder ‘every’ vs. der ‘the’: picture with one relevant object
   i) ‘The girl is playing soccer.’
   ii) ‘Every girl is playing soccer.’

b. keiner ‘no’ vs. keine ‘no’:
   a. kein ‘no’:
   i) ‘Every bear is sleeping.’
   ii) ‘There is no bear that is sleeping.’
Results As shown in (4), 6-year-olds gave expected responses 60.7% and 71.1% of the time in condition A and B, while they did so 90.4% and 93.5% of the time for condition C and fillers. This result corroborates Heim’s prediction.

In diagram (4), 5-year-olds apparently do “better” than the 6-year-olds. But, when we consider how often children choose the “wrong” alternative, shown in (5), we see that the likelihood of choosing the wrong alternative is higher over-all for 5-year-olds. The difference between 5- and 6-year-old children is that 6-year-olds are more likely to say both alternatives are fine in a given context.

Discussion Recall that the prediction of Heim’s theory is that the acquisition path of anti-uniqueness presupposition should correlate with that of scalar implicatures, not with that of existence presupposition.

Among the subjects from each age group, five 5-year-olds, 11 6-year-olds, four 7-year-olds, and six 8-year-olds said both alternative sentences were good for either context A or B (or both) for at least one of the test items. Among them, three 5-year-olds, eight 6-year-olds, two 7-year-olds, and three 8-year-olds indicated both alternatives are good in at least one sentence each from both contexts A and B. For Context C, however, there was only one 8-year-old who has given this type of response. That this type of response obtained almost exclusively for the context A and B supports Heim’s proposal: both scalar implicature and implicated presupposition calculation use the same pragmatic mechanism.

References

