Social factors contextualize syntactic representations in development
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Research has suggested that syntactic behavior in children can be explained by using statistical pattern extraction mechanisms that are not explicitly tied to social contexts. To explore whether and how social factors might influence syntax acquisition, we developed a task where Japanese children were taught a novel syntactic structure for controlling a robot dog and then were tested in either with the robot dog as interlocutor or the Japanese experimenter as interlocutor. In the first study, we found that 4-year-old children, when talking to the robot, frequently used the novel structure VERB-OBJECT (e.g., “yubisashite ringo”, point apple), while they never used this order in response to questions from a Japanese experimenter. Even though children had only limited experience with the VERB-OBJECT order and the robot, they quickly learned that this order was the preferred order for talking to the robot, but not the Japanese human.

The second question that we were interested in was how these factors change over development. Akhtar (1999) found that older children were more likely than younger children to change the novel structure into the canonical order for their native language structures, and they argued the canonical order was supported by a gradual input-driven syntax acquisition mechanism. Since we found that social factors (interlocutor language preferences) yielded more novel structures, we examined two accounts of how social and age-related factors are combined. In one account, the social and the age factors have a competitive relationship, since the novel structure is socially appropriate for the robot and the canonical structure should be stronger in older children. This predicts that older children should produce fewer novel structures than younger children when talking to the robot. The second account draws on a model of syntax acquisition (Chang, Dell, & Bock, 2006), where non-linguistic information contextualizes the strength of representations within the syntactic system. In our task, this account predicts that novel structures will shape the child’s interactions with the robot, but there will not be much interference from the canonical representations linked to the Japanese context. Therefore, older children should produce the same or more novel structures than younger children when controlling the robot. When we tested 3- and 4-year-olds with the robot interlocutor, we found that 4-year-olds produce more novel structures (average frequency of 10.6 utterances per child) than the 3-year-olds (6.0 utterances per child). These results cannot be explained by a general improvement in performance over age, because similar studies have found that 4-year-olds use fewer novel structures as they get older (Akhtar, 1999).

Our results suggest that children are sensitive to language preferences of their interlocutor and this influences their choice of syntactic structure. This sensitivity is not reduced by the growth in the child’s knowledge of their native language, and that suggests that social factors contextualize the strength of syntactic representations in development.

References: