

### ***Omission of Prepositions in Production is Linked to Online Comprehension Difficulties***

Omission of functional elements, such as determiners, auxiliaries, prepositions etc. is a typical feature of children's speech at the age of 2 (Guasti et al. 2008, Hyams 1996, Leikin 1998). In production, 2-year-olds omit unstressed prepositions at substantial rates (around 30% of their utterances lack overt Ps), while 3-year-olds do not (cf. Leikin 1998, Mitrofanova 2016, Nicholas 2011). Performance accounts attribute these omissions to limited attention, working memory span, and production limitations, etc. (Nicholas 2011). Representational accounts argue that omissions reflect non-target-like underlying representations at the lexical/grammatical level (e.g., Mitrofanova 2016, Radford & Ramos 2001). The two approaches make contrasting predictions regarding the comprehension of prepositions at the stage of their omission in production: the performance account predicts no significant difference on the comprehension side between children who omit Ps in their production and children who do not. On the other hand, the representational account predicts that the children who omit prepositions would underperform on comprehension tasks as compared to non-omitters.

In order to analyze children's processing of Ps in real time, we conducted a Visual World eye-tracking study that compared online comprehension of locative prepositions (*v* 'in', *na* 'on', *pod* 'under' and *za* 'behind') by 2- and 3-year-old monolingual Russian children (n=18). Children were presented with pairs of pictures on a screen while listening to sentences that contained locative prepositions, and were asked to point at the picture that corresponded to the sentence (Fig.1). The experiment involved 32 stimuli split into two blocks of 16 each that made it possible for each target picture to appear in two conditions: contrasted with a picture that minimally differed from it with respect to the figure object (Control condition) and contrasted with a picture that involved a different locative configuration, while both figure and ground objects were kept constant (Experimental condition). The results revealed that in the Control condition (1C), the 2- and 3-year-olds did not differ significantly either in their offline accuracy (65% vs. 76%; Fig. 2, left panel) or in online eye-movement patterns (Fig. 3, top panel). The proportion of target looks increased significantly for both groups of children in the time interval that contained the disambiguating noun. In contrast, in the Experimental condition (1E), the 2-year-olds' accuracy was around chance and significantly worse than that of the 3-year-olds (48% vs. 74%, Fig. 2, right panel). Moreover, their eye movements showed that they were unable to select the target picture based on the P alone (Fig. 3, bottom panel). At the same time, the proportion of target looks increased significantly in the time interval that contained the disambiguating preposition for the group of 3-year-olds (Fig. 3, bottom panel).

We argue that these results go against pure performance-based approaches and are consistent with an approach that assumes non-target-like underlying lexical/grammatical representations at the stage of preposition omission in production. More specifically, the accumulated results from production, off-line and on-line comprehension studies fit well with an approach assuming initial *underspecification* of functional categories (cf. Hyams 1996, Mitrofanova 2016, Wexler 1994). In a broader context, the underspecification approach can resolve the apparent contradiction between children's early sensitivity to the presence and type of functional categories (cf. Shi 2014, Soderstorm 2008), and the lack of target-like comprehension of functional elements at early stages. These findings can be reconciled if we assume that children's acquisition of functional elements proceeds in two stages: at the initial stage children associate individual functional items with the underspecified functional categories already present in their grammar, and only later establish the full range of semantic distinctions between functional items within each category.

