Bilingual children process *which*-questions in the same way as monolingual children: A visual world paradigm study

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The processing of *wh*-questions in monolingual (L1) English children is moderated by the presence of disambiguating features (e.g. number mismatch between NPs in the sentence, Contemori, Carlson & Marinis, 2017) but this impact has not been investigated in bilingual children. As Contemori et al showed differences between adults and 5-7 year-old children for overall accuracy, i.e. ceiling effects were only observed for the adults, we tested 8-11 year-old children. 47 children (14 simultaneous or sequential bilinguals, M= 9;6 years, with 2 years minimum exposure to English, M=7;2; we are currently recruiting 16 more bilingual children) participated in a visual world paradigm task. Participants heard questions (e.g. “Which bear is chasing the camel?”), looked at two minimally different pictures while a Tobii X120 eye-tracker measured their eye-gaze, and had to click on the correct picture to answer a comprehension question. We manipulated syntactic structure (subject vs. object *which*-questions), number of both NPs (match vs. mismatch), and number of the first NP (singular vs. plural). For accuracy, there was an effect of structure (higher accuracy for subject- compared to object *which*-questions) but no effect of group. Mixed effects linear regression models fitted to the gaze data in ten 200ms bins showed participants had overall greater difficulty with object *which*-questions, questions and where both NPs had the same number (fewer looks towards the correct picture). No main effect of group was found in any bin. There was no correlation between accuracy and either age of onset or length of exposure. The results indicate that 9-to-11 year old bilingual children process *which*-questions in the same way as monolingual children in terms of accuracy and eye-gaze and their performance is affected by the same factors which impact monolingual processing.
References


**Sample visual stimuli** (target pictures for subject were competitors for object wh-questions)

- Number match - First NP singular
- Number match - First NP plural
- Number mismatch - First NP singular
- Number mismatch - First NP plural

**Overview of data** (proportion of looks towards target relative to looks to target and competitor)