

The interpretation and processing of wh-questions by Dutch-speaking children: the role of DP structure

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Children have more difficulties with the comprehension of object-first than subject-first sentences [among others: 1]. Some [2, 3] studies find that children perform better on the interpretation of who (2b) than of which-object questions (1b). Following Relativized Minimality (RM), this is explained by the (dis)similarity of the DP structure: in which-questions but not in who-questions, the DPs are similar. Both contain a lexical NP which makes it harder for children to reconstruct who is doing what to whom. However, not all studies find this result [4, 5].

This research hence examines in more detail how lexical information in DPs contributes to children's interpretation of subject- and object questions. To test RM's thesis, we add another question type in which not both DPs contain a lexical NP: which-questions with a personal pronoun (3). Moreover, unlike most studies dealing with wh-questions [e.g. 1,4], we investigate the processing of those questions using eye tracking. If RM is correct, object questions like (2b) and (3b) should be understood more accurately and processed faster than (1b).

Dutch-speaking children between 5 and 10 years old ($n = 40$) and an adult control group ($n = 30$) completed an eye-tracked sentence-picture matching task with pictures reversing agent-patient roles (conditions in Table 1, 10 items per condition). GLMMs show that adults are more accurate than children ($p < .05$). Zooming in on children's data, subject questions are understood better than object questions ($p < .05$), and the older children get, the better they perform ($p < .05$). Which-object questions with a pronoun (3b) are performed best on ($p < .05$). No difference is found between which and who-questions with a lexical subject (1b) and (2b). This is reflected in the gaze data: for (3b), we find the largest increase in gazes towards the target at the end of the sentence and after that (see Figure 2). Furthermore, GAMMs show that for this condition, there is significantly more target fixation than for condition (1b) and (2b) after sentence offset ($p < .05$).

This result is not easily reconciled with RM, which argues that the dissimilarity of DP structure in object structures contributes to children's understanding of these structures. One possible explanation is that morphosyntactic marking is more important than DP structure in comprehension and processing. Our results, in line with [5], show that subject-verb agreement can only be used at later ages by Dutch children. This could be explained by working memory capacity, which we will examine with a follow-up analysis of our data.

References

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Figures and Tables

Figure 1: Accuracy data

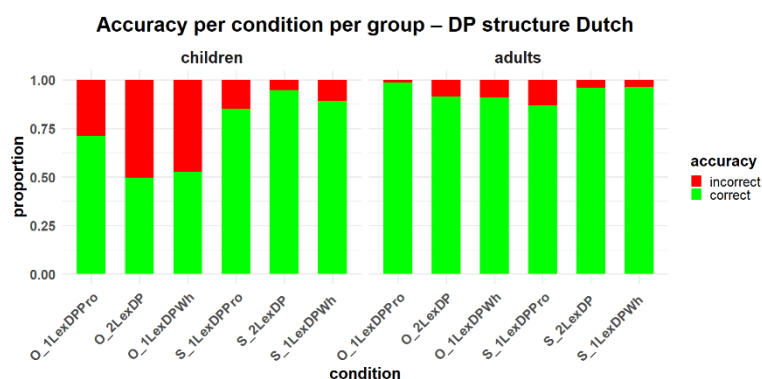
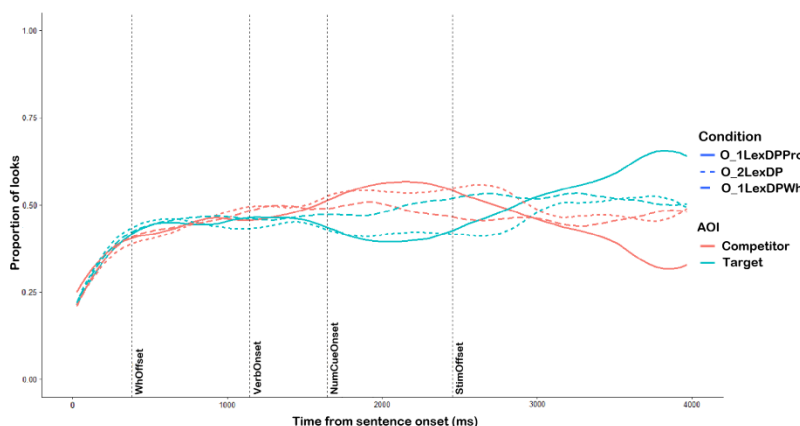


Figure 2: Children's gaze data in object conditions



Optional Supplemental Information

	subject question			object question		
(1)	S_2LexDP	a.	Welke koe groet de giraffen? Which cow.SG greets.SG the giraffes.PL? 'Which cow greets the giraffes?'	O_2LexDP	b.	Welke koe groeten de giraffen? Which cow.SG greet.PL the giraffes.PL? 'Which cow do the giraffes greet?'
(2)	S_1LexDPWh	a.	Wie groet de giraffen? Who.AMB greets.SG the giraffes.PL? 'Who greets the giraffes?'	O_1LexDPWh	b.	Wie groeten de giraffen?* Who.AMB greet.PL the giraffes.PL? 'Whom do the giraffes greet?'
(3)	S_1LexDPPro	a.	Welke koe groet ze? Which cow.SG greets.SG them.PL? 'Which cow greets them?'	O_1LexDPPro	b.	Welke koe groeten ze? Which cow.SG greet.PL they.PL? 'Which cow do they greet?'

Table 1: Conditions of the experiment

*disambiguation of this ambiguous question through picture