Case and grammatical gender information in German- and Hebrew-speaking children

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Complex sentence constructions – sentences derived by syntactic movement of NPs, are problematic for young children to comprehend (among many others: Friedmann, Belletti, & Rizzi, 2009; Friedmann & Novogrodsky, 2004). Case and grammatical gender are types of morphological information that can, but do not have to, provide information about the syntactic roles of the NPs in the sentence. The question we are interested in is: do morphological cues contribute to sentence comprehension and production in young children, and are some cues more helpful than others (e.g., case vs. gender)?

Belletti et al. (in press) found that for typically developing (TD) children, 3;9-5;5 years old, when the two NPs in the sentence were of different genders, comprehension of object relatives improved – in Hebrew, but not in Italian (in which verbs are not inflected for gender). Guasti et al. (2008) found that for TD Greek-speaking children, 4;5-5;6 years old, case marking significantly improved comprehension of object relatives, and significantly more so than number agreement. In Italian as well, number agreement was not found to be a helpful cue for comprehension of object relatives, for children aged 5-11 years (Arosio, et al. 2007 in Guasti et al., 2008. But see Adani et al., 2010 for different results).

In the current research we compared morphological cues in German and Hebrew. In German, the different genders manifest in case marking and determiners, whereas in Hebrew gender is visible via subject-verb agreement. See (1a) and (1b) for German which object questions, and examples (2a) and (2b) for these questions in Hebrew.

(1a) \textit{Welchen MASC Hund beißt die FEM Katze?}  \textit{Which dog is the cat biting?}
(1b) \textit{Welche FEM Katze beißt der MASC Hund?}  \textit{Which cat is the dog biting?}

(2a) \textit{et eize yeled ha-savta mecayeret FEM?}  \textit{ACC which boy the-grandmother draws\textsuperscript{FEM}?}
(2b) \textit{et eiz savta ha-yeled mecayer MASC?}  \textit{ACC which grandmother the-boy draws\textsuperscript{MASC}?}

The aim of this research was to examine the interaction between morphological information (case and gender) and structural complexity, by examining how the different case and gender systems in German and in Hebrew affect language comprehension and production of young TD children.

Participants: German (n=18) and Hebrew (n=13) monolingual TD children, age 4-6 years old. (We aim at testing 40 children in each language, age 3-6 years, 10 in each age group).

Procedure: Comprehension and production of \textit{Wh}-questions (who and which subject and object questions) and topicalization sentences (SVO, OSV and OVS in Hebrew, SVO, OVS with an unambiguously or ambiguously case-marked first NP in German) were examined.

Comprehension. A sentence-picture matching task was used. We compared items in which the two NPs were of the same gender with items in which they were of different genders.

Production. A repetition task was used, including the same types of questions and sentences as in the comprehension task. We compared questions/sentences in which the two NPs were of the same gender with items in which they were of different genders.
Results: A comparison of the comprehension of different types of questions revealed an expected pattern – in German, comprehension of object questions – who and which, was significantly worse than that of subjects questions ($p < .01$). In Hebrew, comprehension of which object questions was significantly worse than all other types of questions ($p < .01$). SVO sentences were comprehended significantly better than topicalized sentences, in both languages.

Considering production, in German, which object questions were significantly more problematic than all other types of questions, and SVO sentences were significantly better than topicalized sentences. In Hebrew, the production was near ceiling, with no differences between types of questions and sentences.

As for the morphological cues: In Hebrew, the gender cue was found to improve significantly comprehension of which object questions and of OSV sentences. In German, no differences were found in comprehension, however, different genders for the two NPs improved production of which object questions and of OVS sentences.

Discussion: These preliminary results reveal a difference between German and Hebrew, two languages that have different case and gender systems, in the way gender cues assist comprehension: whereas in Hebrew the gender cue improved comprehension of which object questions and of OSV sentences, it did not affect comprehension in German.

The Hebrew comprehension findings are in line with the findings of Belleti et al. (in press) who found that gender differences improved comprehension of object relatives in Hebrew. The difference between the effectiveness of the cues in Hebrew and in German might be due to the differences in the way gender is marked in the two languages. In Hebrew, gender is marked on the verb, which is inflected for gender and agrees with the subject. In German, on the other hand, the gender is manifested on the determiner of the noun and not on the verb. Thus, it seems that gender serves as a cue only when it is manifested on subject-verb agreement and not just on the noun phrase.

This idea is supported by Adani et al.’s (2010) results on Italian showing that number, which is marked on the verb that agrees with the subject, improved comprehension more than gender, which is only realized on the determiner.

References


