

German children use prosody to identify participant roles in transitive sentences

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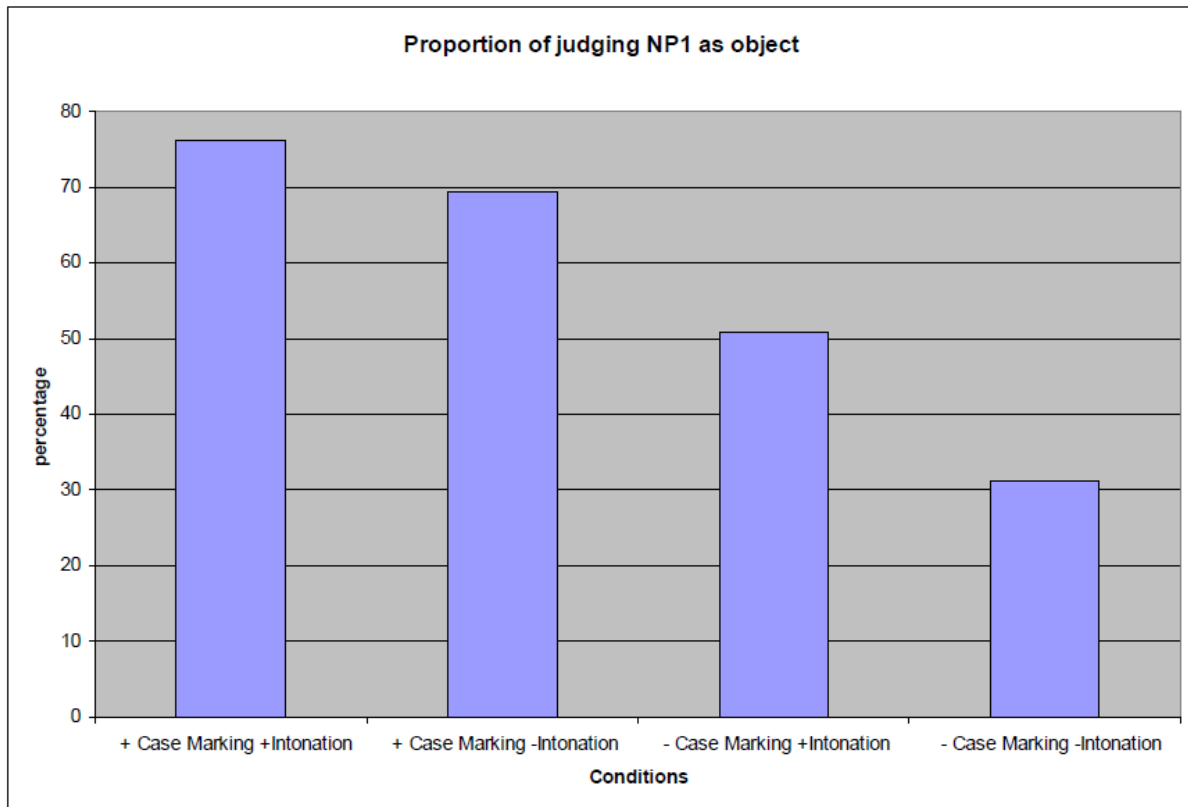
In language acquisition, a construction of particular importance is the basic transitive construction, prototypically used to indicate an agent acting on a patient, as in “The Flomer weefs the Miemel”. To interpret such transitive constructions one needs to understand and to distinguish the different roles of participants and thus the grammatical conventions used to mark these in the particular language being learned. In most languages, the transitive construction marks the roles of two participants with multiple, redundant cues. (e.g., word order, case marking or animacy). For German, a language with case marking and the possibility of OVS word order, Dittmar et al. (2008) found that two year olds only understood transitives with novel verbs, where several cues supported each other. Five year olds were able to use word order by itself but not case marking and only 7-year-olds behaved like adults by relying on case marking over word order when these two cues conflicted (e.g. “Den (+accusative) Löwen wieft der (+nominative) Hund“ – “The (+accusative) lion is weefing the (+nominative) dog”).

However, most studies examining children’s understanding of transitive constructions focus on the morphosyntactic properties of sentences and ignore an additional cue: prosody. But it has been established that different prosodic realizations guide listeners’ interpretation of ambiguous sentences. Grice, Weber & Crocker (2006) found that adult-listeners use prosodic information in the interpretation of ambiguous SVO and OVS sentences when no clear morphological information is available.

In the current study we investigate whether or not German children aged five use prosody for the assignment of participant roles in order to distinguish their semantic roles, as has been found for adults. Using a video-pointing task, we embedded transitive OVS utterances in a natural context and presented these utterances as either clearly case-marked (e.g. “Den (+accusative) Hund wieft der (+nominative) Hase”) or ambiguous (e.g. “Die (+accusative) Katze wieft die (+nominative) Kuh”). In order to examine the specific role of prosody for children in resolving the semantic function of the participants, the intonational realization of these constructions was either flat or, to support the syntactic marking of the utterance, characterized by a strong, contrastive pitch accent on the first Nominal phrase.

The results show that the prosodic cue has a main effect for children for the assignment of participant roles in transitive OVS-utterances ($F(1,15)=5.8$, $p=0.029$). Children were better in judging the correct agent acting on the correct patient when this was clearly marked by intonation compared to unnatural realizations. Even when no clear case marking was available, children understood participant roles significantly better by using the prosodic cue ($p=0.009$) (see Figure 1). These findings show that, when reliable cues contradict each other, 5-year-old children are still able to understand the semantic roles in transitive OVS sentences when appropriate intonation is available. We argue that, to fully understand young children's skills at interpreting sentences online, the role of intonation must be taken into account.

Figure 1:



References:

Dittmar, M., Abbot-Smith, K., Lieven, E., & Tomasello, M. (2008). German children's comprehension of word order and case marking in causative sentences. *Child Development*, 79 (4), 1152-1167.

Weber, A., Grice, M., & Crocker, M. W. (2006). The role of prosody in the interpretation of structural ambiguities: a study of anticipatory eye movements. *Cognition*, 99, B63-B72.