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# Finding Common Ground in Children's Referential Communication

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For referential communication to be effective, it must be made with respect to the discourse context shared by the interlocutors--their **common ground**. It appears that young children may have particular difficulty incorporating common ground information in their production and processing, as they often fail to adapt their speech to a listener's perspective. For example, they often make ambiguous references and frequently fail to establish the antecedents of pronouns and definite noun phrases in their speech (Warden, 1976; Warren & Tate, 1992). This apparent communicative egocentrism could stem from an inability to ascertain or employ what information is shared in common ground.

Results from language processing studies suggest that even adults show evidence of difficulty with integrating common ground information. Keysar and colleagues compared two conditions which tested whether adults completely exclude information *not* shared in common ground from initial consideration. The authors found that privileged information is not completely excluded from initial consideration, and propose a two-stage model in which common ground information is used late in processing (Keysar, Barr, Balin & Paek, 1998). The present study investigated to what extent and when preschool children *do* rely on common ground information in their production and comprehension.

5 to 6 year-old children's ability to identify a unique referent with respect to common ground was tested 1) in an elicited production task, and 2) by the analysis of their eye movements, obtained from a head-mounted eye-tracking system, as they interpreted instructions in a comprehension task.

In both tasks, children viewed a vertical display containing four objects, one of which was hidden from an experimental confederate's view. Three conditions were compared: in the Contrast condition the target object and a competitor object that differed from the target with regard to a scalar feature (e.g. a big cup and a small cup, respectively) were visible to both participants; in the Contrast-Obscured condition the competitor object was available in the child's privileged view but obscured from the confederate's view; and in the No Contrast condition the competitor object was replaced by an unrelated object.

In the elicited production task children had to instruct their adult partners to pick up the target object. Children used modification in their description of the target object significantly more frequently in the Contrast condition, when both the target and competitor object were visible to both participants (requiring additional modification to distinguish between them), than in either of the other two

conditions, indicating the use of common ground in their production.

The on-line comprehension task using eye movement monitoring showed particularly striking use of common ground information. Children were instructed to pick up the target object and their eye movements were monitored as they interpreted this instruction. The description of the target object was always in the form of the head noun (e.g. the cup), regardless of condition. The eye movement data from the Contrast-Obscured condition showed no evidence of interference of the competitor object when it was hidden from the confederate's view, even from the very earliest moments of processing a target description. The time children took to identify the target object was not significantly different in the Contrast-Obscured and No Contrast(baseline) conditions. However, when the competitor object was in common ground, massive interference effects were found. Although the competitor object was visible to children in both conditions, it only impacted their processing of the instruction when it was part of the common ground information they shared with their interlocutor.

These results suggest that, in a sufficiently simple task, common ground information can be used in the earliest moments of processing, even by young children. This finding corroborates research done with adult subjects by Hanna et al. (1998) and Arnold et al. (1999), which found common ground information to be used as a partial constraint on initial interpretation.

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