

## The role of visual perspective-taking in pragmatic inferencing

**Background** Tracking and integrating common ground, including visual perspective-taking, forms an integral part of the inferencing process in many models of pragmatic inferencing (e.g. the Epistemic Step in implicatures, Sauerland, 2004; neo-Gricean approaches more generally, e.g. Frank & Goodman, 2012). This has been extensively investigated in referential communication with adults (e.g. Heller, Grodner & Tanenhaus, 2008; Epley, Morewedge & Keysar, 2004) and, to a lesser extent, children (e.g. Nilsen & Graham, 2009); findings indicate both egocentric as well as altercentric biases that may be weighted by a variety of contextual factors (Hawkins & Goodman, 2016). The majority of work on implicatures, meanwhile, has employed experimental contexts in which informativeness and common ground align where speaker and hearer share all relevant information that renders an utterance equally informative for both. In these situations, children become competent from 3 years with ad hoc quantity implicatures (e.g. Stiller, Frank & Goodman, 2015). Only a few studies have examined what

investigated whether children can like adults *not* derive an implicature when critical information that would have licensed the implicature is in their privileged ground.

**In this series of studies**, we address the overarching question: how are common ground and expectations of informativeness integrated in inferencing of implicatures? Firstly, we look at whether children can appropriately not derive an implicature when the contrastive referent that would have licensed the implicature is in privileged ground. We then further investigate the cost of integrating conflicting sources of information in an online reaction time study with neurotypical adults

with a picture-matching quantity implicature task.

**Study 1A and 1B** We tested English-speaking children (Study 1A aged 5;3-6;4 N=33; Study 1B aged 5;11-7;11 N=25) and adults (Study 1A N=36, Study 1B N=18). Study 1B improved upon the design of Study 1A with some small modifications, and replicated the results in the critical condition, and we report only 1B here. Participants collected double-sided

There were four conditions (6 trials per condition) see Fig. 1. In the critical privileged ground ad hoc condition, the card with only Xs was in privileged ground, while the card with Xs and Ys was in common ground. If participants take into perspective, they would not derive an ad hoc implicature, and instead choose the card



Figure 1 Study 1B example display and items

\* Half of the items displayed two types of object, still with an unambiguous utterance

with Xs and Ys