

# A computational model for the acquisition of referring subjects in discourse

**Jacolien van Rij**  
University of Groningen

**Hedderik van Rijn**  
University of Groningen

**Petra Hendriks**  
University of Groningen

**Abstract:** In this study, we investigate how children acquire adult-like performance on their use of referring subjects, by modeling experimental data within the cognitive architecture ACT-R. When choosing which type of referring expression to use, speakers have to take into account the linguistic discourse context as well as the way listeners will interpret the referring expression in that context. Children, however, tend to produce unrecoverable pronouns in particular contexts where adults would use a full noun phrase. This suggests that children are not yet able to take into account the listener's perspective. Based on simulations of our computational model, we argue that the adult use of referring subjects is crucially dependent on sufficient working memory capacity and speed of linguistic processing.