Children Want to Access Every Interpretation Adults Do

Recent investigations into children’s acquisition of quantification (Musolino, Crain and Thornton 2000, Lidz & Musolino 2002) indicate that children strongly prefer the surface scope reading of quantificational elements in scopally-ambiguous sentences such as (1). Lidz et al. (2004) argue that this isomorphism preference is due to performance, and not competence, factors since children derive adult-like interpretations for sentences which lack negation but which require QR, such as (2), which is an example of antecedent-contained deletion (ACD). However, given that vP is a possible landing site for QR (Fox 1995, 2000, Merchant 2000a, 2000b), even for children (Kiguchi and Thornton 2002), isomorphism in sentences with negation might result from vP (which is located below NegP) being the only available site. Thus, the isomorphism effect might be due to a competence failure after all. We therefore examined children’s interpretations of sentences with multiple landing sites for QR in order to determine whether they are restricted to short (vP-level) QR. We show that children can perform long QR, further supporting the performance account of isomorphism and the conclusion that children’s grammars are adult-like with respect to quantification.

In ACD, because the ellipsis site is contained in its antecedent, attempts to resolve ellipsis without QR result in an infinite regress (Sag 1976, May 1985, Kennedy 1997). Complex ACD sentences with an embedded non-finite clause (3) are ambiguous between two readings: an embedded reading (4a) or a matrix reading (4b). These readings differ in the landing site targeted by QR, and correspond to distinct Logical Forms. If children have adult-like QR, they should be able to generate both readings, but if they are restricted to short QR, they should only generate (4a). In a Truth-Value Judgment Task (Crain & McKee 1985), 24 four-year-olds (M 54:2) and 30 adults were presented sentences like (3) in one of two conditions. In the LO condition (4a) was True and (4b) was False, while in the HI condition, (4a) was False, and (4b) was True. Four verbs balanced for type of syntactic control were used in four different stories: two subject control (want, need) and two object control (ask, invite). Three filler sentences involved cases of unambiguous ellipsis. Since our goal was to determine whether or not children could generate the matrix reading, we used as our dependent measure the percentage of HI responses (i.e., rejection of the puppet’s statement in the LO condition, and acceptance in the HI condition).

While adults provided more HI responses in the HI condition than the LO condition (50% vs. 32%, respectively), children showed the opposite pattern (38% in HI vs. 54% in LO). Because the response pattern was not categorical, we conducted an analysis of the participants’ explanations of their answers. The vast majority of the responses were relevant to the plot (97% of adults’, 99% of children’s). Of these, responses in which one of the two grammatical readings was easily inferable were considered “reliable” responses (80% of adult responses, 68% of child responses). Restricting our analysis to the reliable responses, we observed the same response pattern: adults (56% in the HI condition, and 23% in the LO condition), children (31% in the HI condition, 64% in the LO condition), significant interaction (p<.001).

We also examined the reliable responses for the distribution of LO and HI responses. Adults provided 61% LO and 39% HI responses, and children provided 54% LO and 46% HI responses. Thus, we found that children and adults differed only in their response patterns across conditions, and not their grammatical operation: both children and adults are able to access both the LO and HI readings. Adults generally preferred a LO reading, reflected in the relatively low proportion of HI responses in the HI condition, while children tended to reject the puppet’s statement, independent of condition, using the falsity of the opposite reading as justification for the rejection (i.e., a HI reading to justify a rejection in the LO condition, (5), and a LO reading to justify rejection in the HI condition, (6)). The latter result presents an interesting methodological puzzle since children’s responses indicate clearly that they generated both readings, but also that children did not presuppose that the puppet spoke truthfully.

By demonstrating that children are able to access the matrix (HI) reading for the target sentences in this experiment, we have shown that children can perform long QR, past the closest available landing site. Thus they display full grammatical competence with respect to quantification. Any non-adult-like performance on previous tasks involving quantification and negation must therefore have been a result of performance factors.
Examples
(1) The boy didn’t eat two cookies.
(2) Bert jumped over every frog that Ernie did.
(3) Miss Piggy _ wanted to _ drive [every car that Kermit did].
(4) a. ... every car that Kermit <drove> (LO)
   b. ... every car that Kermit <wanted to drive> (HI)
(5) a. Miss Piggy wanted to drive the red cars and Kermit wanted to drive the other cars.
   b. The Cowboy showed the Cowgirl with the little frogs, and the Cowgirl needed to jump over the small ones, and the Cowboy needed to jump over the big ones.
   c. Pooh and Tigger invited Piglet to eat different treats.
(6) a. Miss Piggy wanted to drive the cars Kermit didn’t drive.
   b. The cowboy jumped over the little frogs, and the Cowgirl had to jump over the big frogs.
   c. Clifford wanted Goofy to read the big books. Scooby read the little books.

References