When speakers are more logical than hearers: why children show adult-like production but not adult-like comprehension of scalar items

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An utterance such as "Some dinosaurs have feathers" is usually interpreted by adults as being equivalent to "Some but not all dinosaurs have feathers". Preschoolers struggle to infer *some but not all* from *some*: their ability to draw this kind of inference, called scalar implicature, is not adult-like until the age of 5 or 6 (e.g., Foppolo et al., 2012, 2020; Guasti et al., 2005; Katsos & Bishop, 2011; Noveck, 2001; Papafragou & Musolino, 2003; Skordos & Papafragou, 2016). Despite this, some experimental studies point to a discrepancy between the well-attested children's difficulties in comprehension and children's almost adult-like use of *some* in production (Foppolo & Guasti, 2005; Katsos & Smith, 2010). Moreover, corpus data show that children are able to produce scalar items such as *some* with the upper-bounded meaning (*some but not all*) shortly after their second birthday (Eiteljoerge et al., 2018). Importantly, as confirmed by eye-tracking data (Huang & Snedeker, 2009), children's difficulties emerge at the processing level too. Thus, their struggles in comprehension cannot be merely an artifact of task demands. Hence, a production-comprehension asymmetry seems to emerge in connection with scalar implicatures in language acquisition: the adult-like comprehension of a scalar item such as *some* requires three years more than the adult-like production of the same scalar item.

Here, we develop an account of children's comprehension difficulties and production successes. We show that the asymmetry can be explained by the fact that, at the cognitive level, the production process and the comprehension process impose different requirements in terms of theory of mind. Specifically, we argue that the comprehension of *some* requires the hearer to consider the speaker's perspective, but the production of *some* does not require the speaker to consider the hearer's perspective. Hence, because of their still-developing theory of mind skills, young children are predicted to be able to produce, but not to interpret, *some* in an adult-like way.

Besides highlighting the fundamental relation between recursive theory of mind and scalar implicature generation, our account can explain children's variable performance in comprehension studies. Moreover, by clarifying the reason why numeral comprehension does not require implicature generation, our account sheds new light on children's acquisition of number words.

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