

Sarah Dolscheid, Franziska Schleussinger, Martina Penke
Department for Rehabilitation and Special Education
University of Cologne

Different pragmatic interpretations of German ‘eine’ (a/one) in children and adults

Children seem to treat cardinal numbers (like 1, 2, 3) and quantifiers (like *some*) differently with respect to pragmatic principles (e.g. Hurewitz et al., 2006). For instance, 3-year-olds reject the claim that an alligator has *two* cookies when in fact he has *four*, whereas they accept that the alligator has *some* of the cookies when in fact he has *all* of them (Hurewitz et al., 2006). Children thus assign upper bounded interpretations to numbers but not to quantifiers. A similar observation holds for the numeral *one* vs. the indefinite determiner *a*. That is, English-speaking children do not accept two strawberries as a correct response to the question “Is there one strawberry in the red circle?”, but they do if the question includes *a* instead of *one* strawberry (Barner et al., 2009). Unlike English, however, many languages do not draw a distinction between the indefinite determiner *a* and the numeral *one* (e.g. Sarnecka et al., 2007). In German, for instance, ‘*eine*’ serves both functions. This raises the question of how German-speaking children and adults interpret the ambiguous term *eine*.

To find out, we tested 37 German-speaking children (3- to 6-year-olds) and 31 adults in a Truth-Value Judgment task (based on Barner et al., 2009). Participants were asked to answer the following question “Ist da eine Erdbeere in der Schüssel” ‘Is there a/one strawberry in the bowl?’, while they were presented with different numbers of strawberries (i.e., zero, one, or two; see Figure 1a). German-speaking adults predominantly showed an upper bounded interpretation of *eine*. Only the minority of adult speakers (32%) accepted two strawberries as a correct response to the ambiguous term. In contrast, the majority of the children (89%) considered two strawberries a correct response for *eine* (see Figure 1b). Unlike English-speaking children who draw a distinction between *one* and *a*, German-speaking children seem to interpret *eine* as the determiner *a* and not in an upper bounded way (i.e., exactly one). This is also in contrast to adult speakers of German who prefer an exact interpretation of *eine*.

Is it possible that context has an impact on adults’ interpretation of *eine*? To test this assumption, we administered a modified version of the Truth-Value Judgment task. While the exact same question was asked, participants were presented not only with different numbers of strawberries but also with other types of fruit (e.g. two bananas, three oranges; see Figure 2a). Again, the majority of children accepted two strawberries as a correct response to *eine* (92%). However, also 61% of the adults accepted two strawberries as a correct response in the ‘multi-fruit’ context, resulting in a less exact interpretation of the term *eine* (see Figure 2b). Our results thus show that – depending on contextual information – the same question may or may not elicit an upper bounded interpretation in adults. In sum, our findings shed light on developmental aspects of quantifier acquisition as well as on factors that can influence the pragmatic interpretation of the ambiguous term *eine* in German.

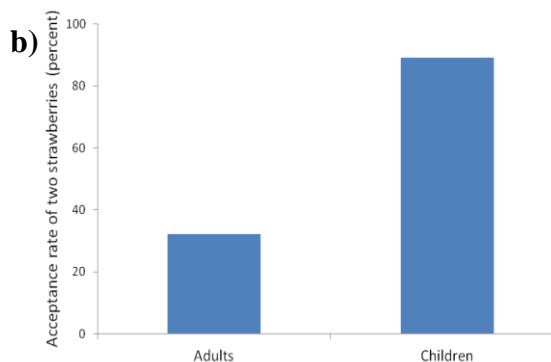
Figure 1

Truth-Value Judgment task (‘strawberries only’ condition)

a)



Ist da eine Erdbeere in der Schüssel? Is there a/one strawberry in the bowl?



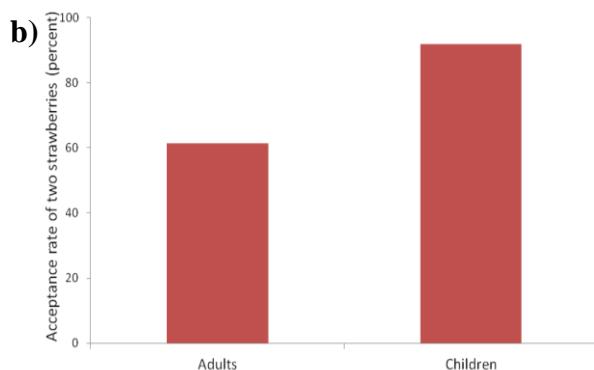
Children accepted two strawberries significantly more often as a correct response than adults (Fishers exact test; $p<.0001$).

Figure 2

Truth-Value Judgment task ('multi-fruit' condition)



Ist da eine Erdbeere in der Schüssel? Is there a/one strawberry in the bowl?



Children still accepted two strawberries significantly more often than adults (Fishers exact test; $p<.001$). However, adult participants accepted two strawberries significantly more often in the 'multi-fruit' condition compared to the 'strawberries-only' condition (McNemar's test: $p<.01$).

References

- Barner, D., Chow, K., & Yang, S. J. (2009). Finding one's meaning: A test of the relation between quantifiers and integers in language development. *Cognitive Psychology*, 58(2), 195-219.
- Hurewitz, F., Papafragou, A., Gleitman, L., & Gelman, R. (2006). Asymmetries in the acquisition of numbers and quantifiers. *Language learning and development*, 2(2), 77-96.
- Sarnecka, B. W., Kamenskaya, V. G., Yamana, Y., Ogura, T., & Yudovina, Y. B. (2007). From grammatical number to exact numbers: Early meanings of 'one', 'two', and 'three' in English, Russian, and Japanese. *Cognitive Psychology*, 55(2), 136-168.