

## **The effect of sentence-level focus on scope resolution in negated sentences: When preschoolers' focus comprehension is adult-like**

**Introduction.** Existing empirical research has led to mixed results regarding preschool children's ability to interpret prosodically marked focus in sentence comprehension (as opposed to production, see Höhle et al. 2016). While children do show some sensitivity to focus, many offline experiments testing focus comprehension reveal non-adult-like response patterns in this age group, and occasionally beyond it (Wells et al. 2004, Notley et al. 2009, Chen et al. 2019, Pintér & Surányi 2023). Some other offline experiments (Szendrői et al. 2017) as well as eye-tracking and ERP studies (Pannekamp et al. 2011, Sekerina & Trueswell 2012), however, point to preschoolers' adult-like performance. It seems clear then that children's adult-like focus comprehension may be heavily influenced by what aspects of linguistic meaning (e.g., the truth/falsity of contextually relevant contrasting alternatives) and what depth of processing the experimental task involves (Höhle et al. 2016, Szendrői 2017).

**Background and research question.** In this paper we investigate Hungarian preschoolers' comprehension of sentence-level focus in terms of its effect on the resolution of logical scope ambiguity in negated sentences like (1). (1) is logically ambiguous between a Disjunction Wide Scope (DWS) reading (2a) and a Disjunction Narrow Scope (DNS) reading. Negated sentences were chosen because, although there have been arguments in the literature pointing to certain effects of focus on logical scope readings (Ionin and Luchkina 2018, Oikonomou et al. 2020), the most consistent effect has been found in scope interaction with clausal negation. According to Goodhue (2022), when negation functions as the focus of the sentence, it indicates that the sentence is an answer to a positive polar question. Such negative sentences with focus on negation are systematically characterized by a stronger tendency for negation to have wide scope over a sentence-internal quantified NP than otherwise (Baltazani 2002, Turi 2020).

In opting for sentences with scope interaction between clausal negation and disjunction, we capitalized on the fact that adults appear to be able to factor prosody into the scope resolution of such sentences in Dutch (van Hout et al. 2024) and that an information structurally neutral version of this sentence type has already been tested in prior research both with Hungarian children and adult controls (Pagliarini et al. 2022). Children's and adults' basic scope preferences often diverge in logically scope-ambiguous sentences. The degree of divergence for this particular sentence type in Hungarian found in Pagliarini et al. (2022) provided an anchor for our expectations of the scope resolution outcomes for the two age groups in an unmarked information structure. That preschoolers are able to exploit prosody in the interpretation of information structure has been shown for contrastive topic intonation (Japanese: Sugawara et al. 2018, German: Yatsushiro et al. 2019), and for prosodic focus on disjunction (Larralde et al. 2021), which, we argue, marks its exclusivity (Chevallier et al. 2008). The goal of our current study was to gauge whether the effect of prosodically marked sentence-level focus on children's scope interpretation is adult-like.

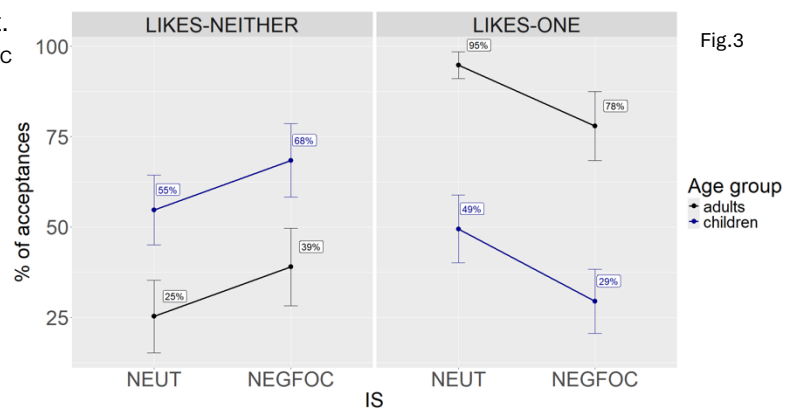
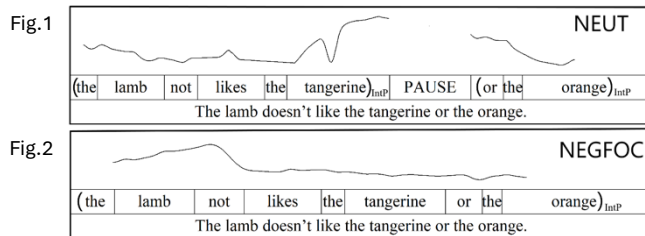
**Method.** We conducted an experiment with 38 children (4;1–6;10, M=5;4) and 38 adult controls, using an adaptation of Goro and Akiba's (2004) Truth Value Judgment task. In the setup an imaginary character made guesses about animals that appeared in an animation. Participants were informed that there are two plates in front of each animal. In each scenario, a tangerine is placed on one of the plates, and an orange is placed on the other, at random. Which plate has which fruit was not visible in any scenario. Each animation provided the target truth conditions for a pre-recorded sentence that was played during the animation as a guess of a blind-folded Elf. Critical sentences were of the form in (1), with neutral SVO order. In one type of critical items, the animal liked exactly one of the two fruits. At one plate, it raised their hand to its face and made a biting sound, while pulling a sad face and making a sighing sound at the other plate (LIKES-ONE scenario). In this condition, participants acceptance of the Elf's guess as true indicated the DWS scope reading. In the other type of critical items, the animal liked neither fruit. It went to each plate, pulling a sad face and making a sigh at each (LIKES-NEITHER scenario). In this condition, it is rejections that indicated a DWS scope reading. Scenario type (Context) was a within-subject

condition. The critical sentences were presented with two different prosodic realizations, reflecting two Information Structures (IS). In one prosodic pattern (Fig.1), negation and each of the two disjuncts carried an accent, and the latter were separated by a prosodic boundary (the neutral, NEUT condition). In the other prosody (Fig. 2), negation carried a prominent falling accent and was followed by no other major prominence or prosodic boundary (the condition with focused negation, NEGFOC). IS was a between-subject factor (in both age groups) in order to prevent its potential carry-over effect between items in the child group (Snedeker and Yuan 2008).

**Predictions.** Based on Pagliarini et al. (2022), in our NEUT baseline condition we expected Hungarian adults to tend to accept the LIKES-ONE scenario but tend to reject the LIKES-NEITHER scenario, and preschoolers to accept LIKES-NEITHER trials somewhat more than the LIKES-ONE scenario. Based on Baltazani (2002) and Turi (2020), focus on negation was expected to enhance adults' availability of the DNS reading, in which negation takes wider scope, and concomitantly reduce the availability of the DWS reading. This was expected to raise the rate of LIKES-NEITHER acceptances on the one hand, and to decrease the rate of LIKES-ONE acceptances on the other. Crucially, if preschoolers' scope resolution is affected by focus on negation in an adult-like way, then they were expected to show a similar effect.

**Results and discussion.** As Fig. 3 shows, the response tendencies in the NEUT baseline condition were in line with our diverging expectations for the two age groups based on Pagliarini et al.'s (2022) results. As predicted, focus on negation boosted adults' LIKES-NEITHER acceptances and reduced their LIKES-ONE acceptance rate. Importantly, despite the differences from Adults in their baseline levels of acceptance, Children's acceptance rates were shifted in each of the two scenario types in the same direction as in the case of Adults. Analysis using binomial mixed-effects models with sum coding revealed the expected overall difference between Adults and Children both as a main effect of Age Group and as a significant interaction between Age Group with Context. As acceptance rates were shifted in opposite directions across the two context scenarios, Context showed strong interaction with Information Structure. Importantly, that was not in a three-way interaction with Age Group: the effect of focus on children was no different from that on adults. Our study reveals that sentence-level focus affects preschoolers' scope resolution of negated sentences containing disjunction in an adult-like way. In the talk, we also discuss how this is reflected in the frequency distribution of individual participants' different response patterns across the two age groups and identify avenues for further research.

- (1) A cica nem szereti a mandarint vagy a narancsot.  
 the cat not likes the tangerine<sub>ACC</sub> or the orange<sub>ACC</sub>  
 DWS: "One or the other the cat doesn't like."  
 DNS: "The cat doesn't like either one."



### Selected references

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