

A cross-linguistic investigation of children's negative indefinite production

Introduction. Bill et al. (2019) conducted an experiment with 18 German-speaking children (3;6-6;2, $M = 4;9$) and 15 adults to elicit negative indefinites and universal quantifiers in subject position (picture description task, see Fig.1). Adult responses were in-line with this design, producing sentences like *all/no cats have a hat*. In contrast, while German-speaking children followed adults with universal quantifier subjects, they described *none* pictures (Fig.1a) using sentences like (1b), diverging from the structures adults produced (1a). Bill et al. (2024) explain this behavior by adopting a decomposition analysis of negative indefinites (NIs), whereby, NIs are unified with negative concord items (NCIs) by decomposing them into plain indefinites which must occur in the scope of sentential covert negation (Penka, 2011; *pace* Zeijlstra, 2011). Bill et al. (2024) further propose that in German, a) children license subjects by moving them above negation to Spec,TP, b) NI subjects need to be reconstructed under negation in order to be licensed, and c) reconstruction has a high processing cost (Anderson 2004).

Hypothesis. The Bill et al. (2024) account makes the same prediction across all languages in which the subject is pronounced in a position higher than the object. Namely, that children will replicate this pattern of not producing sentences with N(C)I subjects. In our [preregistered study](#), we tested this prediction by replicating Bill et al.'s (2019) experiment with Italian (28 children 3;11-5;11, $M = 4;12$ & 15 adults) and English (13 children 4;04-5;11, $M = 5;02$ & 20 adults).¹ English is different from German in that subject movement to Spec,TP is uncontroversial in the adult grammar (Chomsky 1982). Thus, there is a strong prediction that the German results should be replicated for English. Italian is different from German in that it is a negative concord language. A replication of the German results would indicate that the decomposition analysis also holds for NCIs, thereby questioning analyses that take semantic negation to be introduced directly at the NCI-level (Haegemann & Zanuttini 1991, Watanabe 2004, Espinal et al. 2023). If NCIs were encoding negative existential quantifiers, we would expect no reconstruction costs, and thus no problem producing subject NIs.

Results. Fig.2 presents the results from Italian and English contrasted with the original German results from Bill et al. (2019). For each language, we conducted a mixed-effect logistic regression analysis. Fixed effects were *group*, *picture*, and their interaction. The models contained the maximal random effect structures that achieved convergence. As shown in Table 1, for Italian, we found significant effects for both fixed effects and their interaction. For English, there was only a significant effect for *picture*.

Discussion. Italian children rarely produced NI subjects, in-line with Bill et al. (2024)'s prediction. English-speaking children, however, produced utterances with NI subjects at adult-like rates, challenging their analysis, which predicted that children should universally have difficulties with NI subjects. We nevertheless propose to retain a decompositional analysis of NIs cross-linguistically. Instead, we attribute the split between English and German/Italian to distributional restrictions of the covert NEG operator. German is a V2 language, leaving no room for the insertion of NEG to scope over preverbal subjects. Similarly, we assume that Italian preverbal subjects occupy a slot in the split CP projection that leaves no room for a higher covert NEG operator (see Rizzi 1997). Supportive evidence for high negation in English comes from the presence of Negative Inversion (e.g. *not a single paper did he finish on time*) (Haegeman 2000). Hence, preverbal subject N(C)Is in German and Italian obligatorily undergo costly reconstruction, which causes the avoidance patterns with children. No such problems arise with English, as it contains a slot above the subject that can (exclusively) be filled with a NEG operator. More broadly, our results imply (i) a syntactic status of the covert NEG operator, whose distribution is not fixed across languages, and (ii) a shared underlying structure for NIs and NCIs.

¹We plan to collect data from another 7 English-speaking children.

- (1) a. Keine Katze hat einen Hut. (*adult*) b. Alle Katzen haben keinen Hut. (*child*)
no cat has a hat All cats have no hat
‘No cat has a hat.’ ‘All the cats have no hat.’
- (2) a. Nessun gatto ha un capello. (*adult*) b. Tutti senza capello. (*child*)
no cat has a hat all without hats
‘No cat has a hat.’ ‘All without hats.’

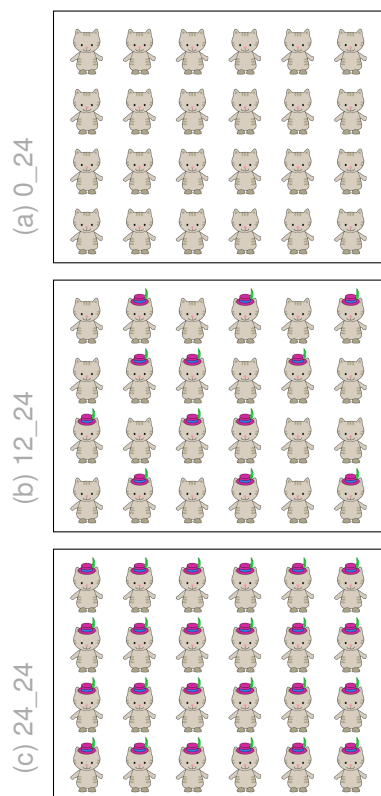


Fig. 1. Cats wearing different amounts of hats. Experiment also included ‘6/24’ and ‘18/24’ pictures.



Fig. 2. Rates of expressions containing the relevant determiner (i.e., negative indefinite/universal quantifier) in the subject role. Vertical bars represent standard error.

Language	Effect	$\chi^2(1)$	p.value
Italian	group	18.05	<.001*
Italian	picture	11.12	<.001*
Italian	group:picture	14.8	<.001*
English	group	0.18	.673
English	picture	12.99	<.001*
English	group:picture	0.13	.723

Table 1. Results of model comparison via Likelihood Ratio Tests.

Sel. Refs.: Anderson (2004). The structure and real-time comprehension of quantifier scope ambiguity. *PhD Thesis Northwestern University*. • Bill, Yatsushiro & Sauerland (2019). Asymmetries in Children’s Negative Determiner Production. *Poster at BUCLD*. • Bill, Driemel, Yatsushiro, Hein & Sauerland (2024). Kein subjects are hard: Exploring German-speaking children’s behavior with negative indefinites. *Language Acquisition*. • Haegeman (2000). Inversion, non-adjacent inversion, and adjuncts in CP. In: *Transactions of the Philological Society*. Blackwell. • Penka (2011). *Negative Indefinites*. Oxford University Press. • Rizzi (1997). The fine structure of the left periphery. In: *Elements of grammar*. Kluwer. • Zeijlstra (2004) *Sentential negation and negative concord*. LOT.