

Experimental Evidence for Cross-linguistic Differences in Subject-Verb Agreement Use: Dutch vs. Italian Children in Wh-Question Processing

Subject-verb agreement morphology is an important cue for sentence comprehension, with different weights in different languages [1]. In Italian, children begin to rely on verbal morphology for sentence comprehension by age five [2], in Dutch much later [3]. Nevertheless, subject-verb agreement can, and in some cases has to, be used to interpret wh-questions and agent-patient relations. For instance, in object wh-questions (1-2), verb inflection is essential for correct interpretation.

Dutch:	1)	<i>Welke jongen</i>	<i>duwen</i>	<i>de meisjes?</i>
Italian:	2)	<i>Quale bambino</i>	<i>spingono</i>	<i>le bambine?</i>
		“Which boy	push-3PL	the girls?”
		“Which boy are the girls pushing?”		

Previous research found that Dutch children do not use subject-verb agreement to interpret object wh-questions (i.e., ‘who does what to whom?’) until at least age nine [4,5]. Similar results exist for Italian [6]. This raises the question of whether subject-verb agreement is a weak cue for identifying the subject in wh-questions. To explore this, we use eye-tracking and reaction times to investigate how Dutch and Italian children acquire and process number morphology on verbs in intransitive wh-questions.

Dutch and Italian share similarities: in both languages, subject and object wh-questions are structurally ambiguous. However, they also differ in relevant ways. Italian has a richer verbal inflection system compared to Dutch. Additionally, Dutch wh-words are number-ambiguous, and both singular and plural verb forms can agree with subject *who* or *which*. In Italian, *which* differ in form for singular and plural (*quale* vs. *quali*), and when subject, it can be followed by a singular or plural verb form; *who* (*chi*) is unmarked, and when subject it can only be followed by a singular verb form.

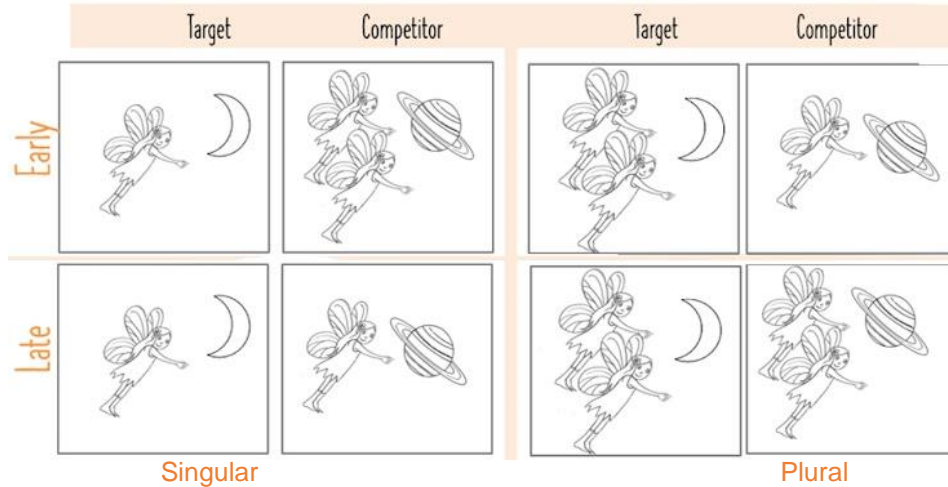
We created a picture selection task where children heard wh-questions with present-tense verbs while looking at two pictures on the screen: a target and a competitor. Sentences included copular or intransitive verbs. We manipulated verb number morphology and picture features to create an early and late condition: early allowed identification of the target from verb number morphology, late required waiting for a disambiguating PP (Figure 1).

For Dutch, we collected accuracy (at ceiling), reaction times (analyzed with LMMs), and gaze data in a picture-selection task with *who*- and *which*-questions from 38 children (6-7 y.o.) and 18 adults. For Italian, we collected accuracy and reaction times for copular *who*-questions comprehension from 15 children (4-6 y.o.) and 12 adults; data collection with eye-tracking is still ongoing.

For Dutch, RTs did not differ between early and late conditions or between singular and plural verbs. Gaze data showed a slight difference: in the early condition, looks to target increase earlier compared to late condition, but this difference was only about 400 ms and after the sentence ended (Figure 2). Adults showed similar patterns with slightly earlier and larger differences. These results suggest subject-verb agreement is a weak cue in Dutch.

For Italian, early conditions were significantly faster than late conditions (Figure 3). This result suggests that, contrary to Dutch-speaking children, Italian-speaking children make use of subject-verb agreement in wh-sentence interpretation.

These findings highlight how crosslinguistic differences in verbal morphology influence sentence processing during child language acquisition.



DUT: <i>Wie/Welke vliegt_SG er bij de maan?</i>	DUT: <i>Wie/Welke vliegen_PL er bij de maan?</i>
ITA: <i>Chi/Quale_SG vola_SG vicino alla luna?</i>	ITA: <i>Quali_PL volano_PL vicino alla luna?</i>
“Who/Which flies near the moon?”	“Who/Which fly near the moon?”

Figure 1. Examples of items of the two-picture selection task with lexical verbs, similar items included copular verbs.

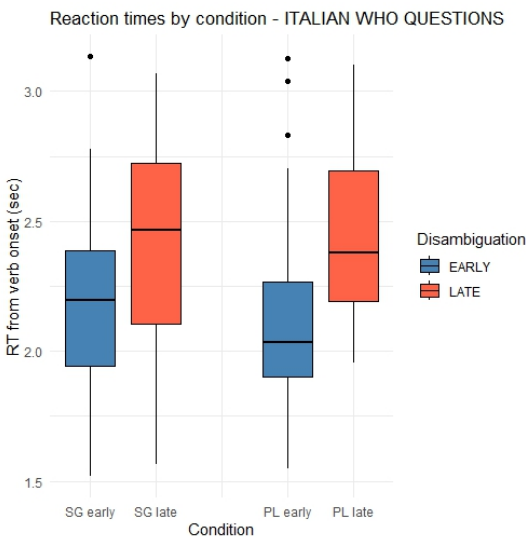


Figure 2. Italian children's RTs for who-questions.

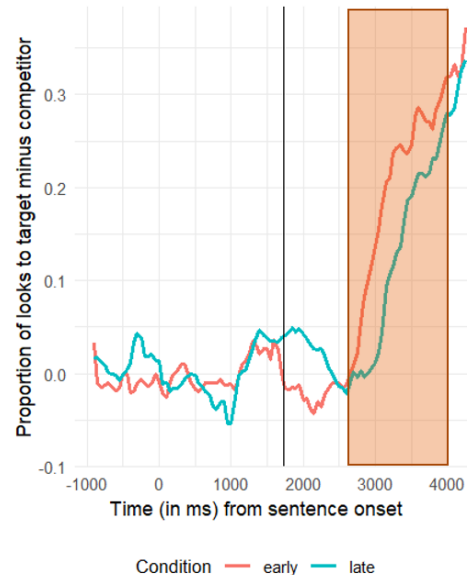


Figure 3. Dutch children's target-minus-competitor looks in early (red line) and late (blue line) conditions from the onset of the sentence. The data is aligned at the onset of the verb (=0). The sentence offset is marked by vertical line (~1700ms); the orange window indicates when target looks begin to rise.

References:

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