

# An Examination of the Metalinguistic Skills of 3- to 8-year-old Twins

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## Background

- Metalinguistic awareness reflects the ability to think about and reflect on language.
- Research suggests that the language development of twins is delayed compared to singleton peers (Thorpe, 2006), but little is known regarding the metalinguistic skills of twins.
- Previous twin studies have generally focused on the language development of children 0 to 3 years of age.
- The current study aimed to examine the language and metalinguistic skills of 3- to 8-year-old twins.

## Participants

- 14 sets of twins ( $n = 28$ ) and 28 matched singletons
- Grouped by age:
  - 3-4 years ( $n = 20$ )
  - 5-6 years ( $n = 20$ )
  - 7-8 years ( $n = 16$ )
- Groups matched on gender, native language, ethnicity, and socioeconomic status.

		Age Group					
		3-4 Year		5-6 Year		7-8 Year	
Characteristic		Single	Twin	Single	Twin	Single	Twin
Age (yr)	Mean	3.90	3.86	5.57	5.61	7.64	7.77
	SD	(.61)	(.67)	(.48)	(.36)	(.52)	(.52)
Gender	Male:Female	5:5	5:5	5:5	5:5	5:3	5:3
	Race	White:Other	10:0	10:0	10:0	10:0	8:0
Income	<\$50k	0	0	1	6	0	0
	\$50-\$100k	1	0	5	0	0	1
	>\$100k	9	10	4	4	8	7


## Method

- Recruitment took place at the Minnesota State Fair in a university-sponsored building dedicated to research.
- Research assistants administered a nonverbal cognitive test, expressive language test, and metalinguistic probe to participants in 30-minute intervals.

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## Tasks

- Clinical Evaluation of Language Fundamentals* (CELF-4; Semel, Wiig, Secord, 2003), Recalling Sentences Subtest: assesses expressive syntax and morphology.
- Kaufman Brief Intelligence Test* (KBIT-2; Kaufman & Kaufman, 2004), Matrices Subtest: assesses nonverbal cognitive abilities.
- Metalinguistic Probe*: evaluates ability to analyze vocabulary and grammatical forms. See description of tasks below.



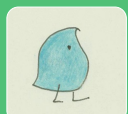
**Task 1: Word Manipulation**

- My friend and I are making up a new language. Could this be a gok? Yes it could. What is this?
  - Can you eat a gok?
  - Do goks have wheels?




**Task 2: Word Swap**

- Suppose that everyone in the world agreed that from now on we will call the sun the moon and the moon will be called the sun.
  - What would this be? (moon)
  - What will the sky look like when you see this? (blue)



**Task 3: Wug Task**

- I am going to show you some pictures and say some sentences. Sometimes a word will be missing. I want you to tell me the missing word.
  - This is a wug. Now there is another one. There are two of them. There are two \_\_\_\_\_.

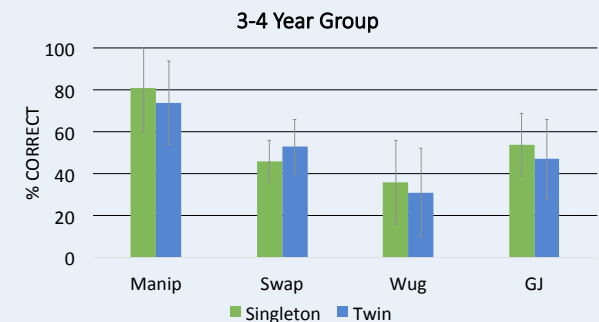
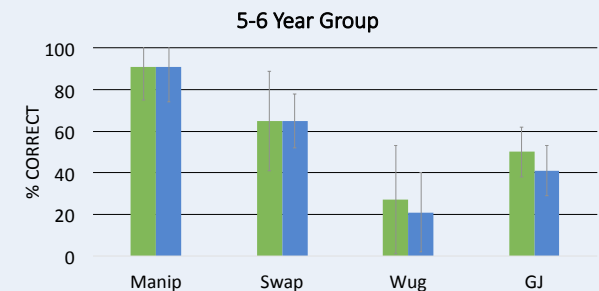
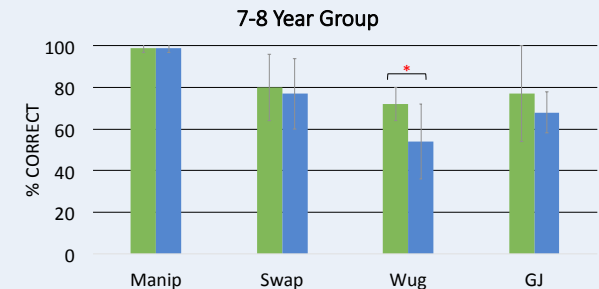


**Task 4: Grammatical Judgment**

- Wobo is a creature from outer space. Sometimes she says things the wrong way. Sometimes she says things that are silly.
  - Apples grow on noses.
  - I have two pencil.

## Results

- 7-8 Year:**
  - Twins performed significantly lower than singletons on Wug Task (Metalinguistic Morpheme production) task ( $p = .02$ ).
- 5-6 Year:**
  - No significant differences between twins and singletons on any measures.
- 3-4 Year:**
  - No significant differences between twins and singletons on any measures.



## Discussion

- There was a trend for singletons to outperform twins on each metalinguistic task; however, the only significant difference was for the 7-8 Year Group on the Wug Task.
- Study findings suggest that delays in the language development of twins may apply to metalinguistic skills and may extend through early elementary school age.
- Future research is needed which includes larger sample size and more extensive language assessment batteries.