

## Background

- Metalinguistic awareness reflects the ability to think about and reflect on language.
- Researchers have found positive correlations between metalinguistic skills and bilingualism, with children with higher levels of language proficiency outperforming those with lower levels of proficiency (Bialystok & Barac, 2011).
- Previous studies have primarily focused on a single age group and limited number of language pairs.
- The current study aimed to examine the language and metalinguistic skills of 3- to 8-year-old children who are bilingual compared to monolingual peers.

## Participants

- 21 children with second language exposure & 21 children with no second language exposure.
  - Language 2 spoken 30%-49.9% of the time ( $n = 12$ )
  - Language 2 spoken 50%-74.9% of the time ( $n = 9$ )
- Languages Spoken
  - Spanish ( $n = 11$ )
  - Chinese ( $n = 3$ )
  - Japanese ( $n = 2$ )
  - French ( $n = 2$ )
  - Vietnamese ( $n = 1$ )
  - Amharic ( $n = 1$ )
- Groups matched on gender, native language, ethnicity, and socioeconomic status.

Characteristic	Age Group					
	3-4 Year $n = 16$		5-6 Year $n = 12$		7-8 Year $n = 14$	
	Mono-	Bi-	Mono-	Bi-	Mono-	Bi-
Age (yr)	Mean 3.92	3.83	6.42	6.42	8.00	7.83
	SD .67	.58	.33	.33	.67	.58
Gender	Male:Female 5:3	5:3	2:4	2:4	4:3	4:3
Race	White:Other 5:3	1:7	4:2	3:3	3:4	3:4
Income	<\$50k 1	1	1	1	0	1
	\$50-\$100k 3	3	2	3	2	2
	>\$100k 4	4	3	2	5	4
KBIT:Raw Score	Mean 12.37	9.75	19.33	23.33	28.00	28.14
	SD 3.25	6.48	4.46	6.68	8.29	7.69
CELF-RS: Standard Score	Mean 12.50	12.14	11.33	11.60	11.14	10.86
	SD 1.41	1.77	2.66	3.36	2.73	1.68

## 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.

## Tasks

- Clinical Evaluation of Language Fundamentals* (CELF-4; Semel, Wiig, Secord, 2003), Recalling Sentences (RS) 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 and manipulate 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 \_\_\_\_\_.

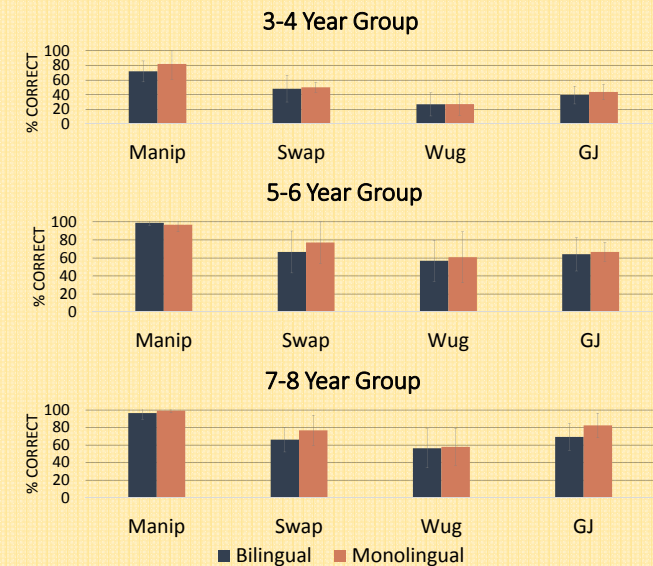


### Task 4: Grammatical Judgment

- 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

- Multivariate analysis revealed no significant effect for language status,  $F(4, 31) = 0.77, p = .55$ .
- There was a significant effect for age,  $F(8, 62) = 7.19, p < .01$ , characterized by the 3-4 Year Group scoring significantly lower than the other ages across all tasks.
- No significant interactions between language status and age,  $F(8, 62) = 0.34, p < .95$ .



## Discussion

- Overall, study results suggest that metalinguistic awareness improves with age, but that bilingual children may not have a metalinguistic advantage.
- Children who were bilingual did not outperform those who were monolingual. This may be due to heterogeneity in language spoken and/or amount of use levels, which ranged from 30%-80%; however, there were no significant correlations between use and performance on key variables.
- The significant effect for age indicates developmental changes in metalinguistic skills. It is likely that some tasks were too easy for older children such that there was no differentiation between 5-6 Year and 7-8 Year Groups.
- Further research is needed which includes more participants that can be grouped by levels of language proficiency. Future studies should also include more developmentally complex metalinguistic tasks.