



Phonological interferences in bilingual acquisition: focus on French and Greek fricatives

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GLOSSARY

Phonological system acquisition
= **establishing sound contrasts**

- **in perception** = adult-like identification of correct and incorrect realization of contrast's members
- **in production** = adult-like realization of contrast's members

Simultaneous bilinguals: children **exposed** to two languages **since birth** (Patterson, 2002)

RESEARCH QUESTION

Aim: Show **evidences of interaction between phonological systems in bilingual acquisition** by comparing them to monolingual peers, under **three types of interferences in production and perception**

Question: How do sound systems interact in bilinguals' production and perception?

INTERFERENCES, SIGNS OF INTERACTION

Paradis & Genesee (1996)

Acceleration: Earlier emergence of certain properties in one or both languages in bilinguals compared to monolinguals

Deceleration: Later emergence of certain properties in bilinguals compared to monolinguals

Transfer: One property is **transferred from one language into the other** + is strongly influenced by language dominance

OUR HYPOTHESES in PERCEPTION & PRODUCTION

Shared contrasts between both languages
LABIAL-CORONAL (/f, v/ vs. /s, z/)

Specific contrasts between both languages
[±posterior] for French (/s, z/ vs /ʃ, ʒ/) & [±strident] for Greek (/s, z/ vs /θ, ð/)

Influence of input on acquisition of **specific contrasts**
[±posterior] → /s, z/ vs /ʃ, ʒ/ **acquired before** [±strident] → /s, z/ vs /θ, ð/

METHOD

13 typically developing children
(2;6 → 4;6 years old)

5 French monolinguals
(mean age = 3 ;5)

4 French-Greek simultaneous bilinguals
(mean age = 3 ;4)

4 Greek monolinguals
(mean age = 3 ;8)

French Tasks

Greek Tasks

Took place at the **child's home**

PRODUCTION



Picture naming task

Transcription +
Analyses with PHON
(Rose et al., 2006)

Measured:

- adult-like productions
- substitutions

PERCEPTION



Discrimination task (Based on Sundara et al., (2006))

Children were asked to **press a red button every time they heard an "incorrect" pronunciation of a word**

[velo] "bike"
[zelo]
[ʒelo]
[ðelo]

Measured:

- accurate identification
- confusion (when an inaccurate realisation was accepted)
- reaction time

Perception: Bilinguals **reacted faster** than monolinguals to identify an inaccurate realization

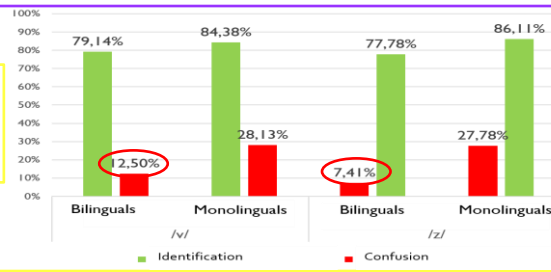
Targeted phoneme	Reaction Time (ms)			
	Accurate identification of an incorrect pronunciation			
	Bilinguals	Monolinguals	Bilinguals	Monolinguals
/v/			3272ms	4458ms
/z/	3231ms	4826ms		

RESULTS

1. Shared contrasts

Production: bilinguals and monolinguals **showed no substitutions** between members of the shared contrast /v/-/z/

Perception: Bilinguals **accepted less mispronunciations** than monolinguals when /v/ or /z/ were substituted



2. Specific contrasts

Perception: Bilinguals **showed more confusion** than monolinguals when /ð/ is the target member of [±strident] /z/-/ð/ in Greek but not in French

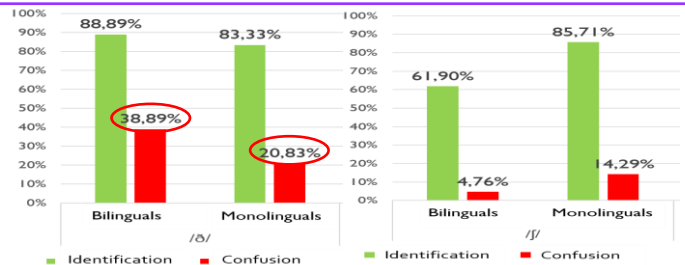


Fig 1: Percentages of accurate identification (in green) and confusion (in red) of /ð/ (left) and /ʃ/ (right) by bilingual and monolingual children

Production: Bilinguals **showed more substitutions** with [z] than monolinguals when /ð/ is the target member of [±strident] /z/-/ð/ in Greek and [s] for /ʃ/ in French

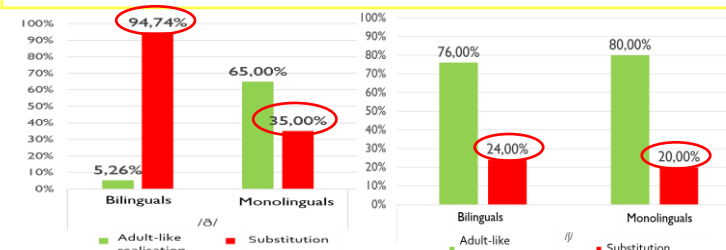


Fig 2: Percentages of adult-like production (in green) and substitutions (in red) of /ð/ (left) and /ʃ/ (right) by bilingual and monolingual children

3. Transfer & Dominance

Perception: Bilinguals **showed less confusion** with [s] when the target is the French /ʃ/ than when the target is the Greek /θ/

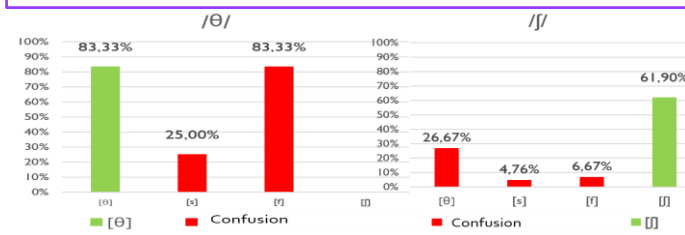


Fig 3: Percentages of accurate identification (in green) and confusion (in red) of /θ/ (left) and /ʃ/ (right) by bilingual children

Production: Bilinguals **showed less substitutions** with [s] when the target is the French /ʃ/ than when the target is the Greek /θ/

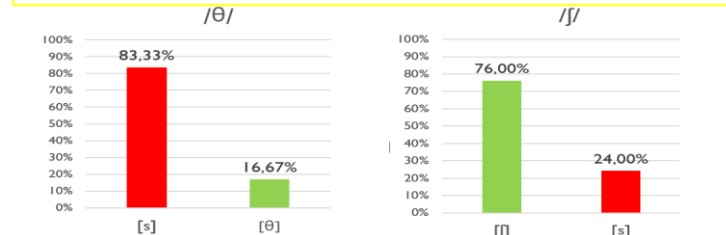


Fig 4: Percentages of adult-like production (in green) and substitutions (in red) of /θ/ (left) and /ʃ/ (right) by bilingual children

DISCUSSION & CONCLUSION

Interferences are:

Triggered by cross-linguistic differences in structural properties:

1. **No acceleration:** bilinguals **did not show better perception nor production of shared contrasts' members** compared to monolinguals

2. **Deceleration:** bilinguals showed **more substitutions and more confusion than monolinguals** when targets are **[-strident] /θ, ð/ in Greek and [+posterior] /ʃ, ʒ/ in French**

Affected by language dominance in the child's input (Foroodi-Nejad & Paradis (2009))

3. **Transfer** in contrasts acquisition order: **French contrast [±posterior] is mastered before the Greek contrast [±strident]**



General Bilingual Effect

❖ **Less confusion + Shorter reaction time** to identify inaccurate realisation of **shared contrasts members**
→ **Could be interpreted as acceleration**

BUT

❖ **It would not be linked to interaction between structural properties** but rather to a **general bilingual effect** (Kehoe & Havy, 2019), resulting in:

- a more efficient information processing (Patuto et al., 2011)
- a higher perceptive sensibility by bilinguals