

Bilingual Infants Learn Cognates More Rapidly Than Non-Cognates

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The cognate advantage seen in childhood and adulthood is present in infant vocabulary development.



Introduction

Translation equivalent learning

- Two cross-language synonyms for the same concepts
- They can be cognates or non-cognates

banana (EN)

banane (FR)

dog (EN)

chien (FR)



cognate

(phonologically similar)



non-cognate

(phonologically dissimilar)

Cognates have a special status in bilingual language processing

- Bilingual adults and children are better and quicker at identifying cognates (e.g., Costa et al., 2000; Kelley & Kohnert, 2012; Sheng et al., 2016)
- 18-month-old Spanish-Catalan bilingual infants produced form-identical cognates more readily, but not form-similar cognates or non-cognates (Bosch & Ramon-Casas, 2014)

si (Spanish)

si (Catalan)

mano (Spanish)

ma (Catalan)



form-identical cognate

(English: yes)



form-similar cognate

(English: hand)



Will this advantage for cognates extend to bilingual infants learning two languages with less phonological overlap, namely English-French?



METHODS

(Pre-registered at <https://osf.io/rh7av>).

Longitudinal data of bilingual infant expressive vocabulary was collected between 16–20 months at the onset of participation.

French-English bilingual infants

47

from Quebec Canada

- Mean starting age = 17.89 months
- During August 2020 – May 2021



Language Exposure Questionnaire

(Bosch & Sebastián-Gallés, 2001)

Using Multilingual Approach to Parent Language Estimates (Byers-Heinlein et al., 2020)

- Exposed globally to
 - Dominant language: 64% (range = 49 – 88)
 - Non-dominant language: 35% (range = 11 – 50)
 - Less than 10% to a third language

Expressive vocabulary measure

Monthly MacArthur-Bates Web-CDIs between August 2020 and May 2021

- 230 English administrations (Fenson et al., 2007)
- 226 French administrations (Trudeau et al., 1999)



Identifying translation equivalents

A full list of 537 translation equivalents between English and French

- 120 form-similar cognates and
- 417 non-cognates

A matched list of 166 translation equivalents between English and French

- 83 form-similar cognates and
- 83 non-cognates
- nouns only and also matched on age of acquisition

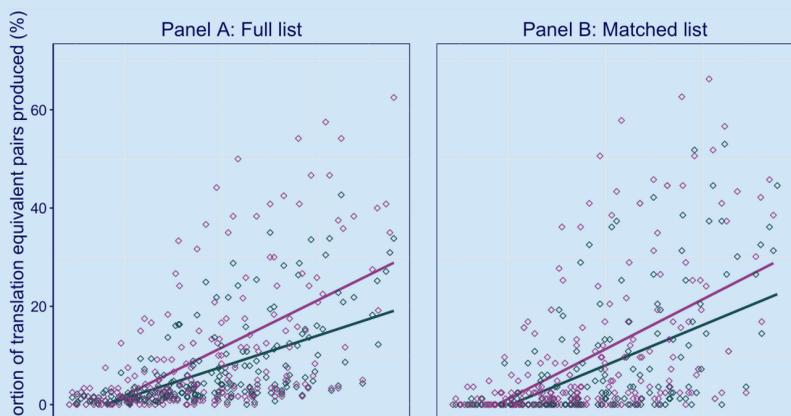


RESULTS

Were both the English and French words in a translation equivalent pair produced?

If yes, then score of 1

If no, then score of 0



Overall, bilingual infants produced more cognate pairs than non-cognate pairs. This pattern was modulated by age, where the advantage for cognates strengthened as bilingual infants aged.



DISCUSSION

Bilingual infants leverage phonological similarity across languages in acquiring vocabulary, especially translation equivalents.

An advantage for cognates

Phonological similarity

Language distance

- Similar to monolingual, similar-sounding words are more readily acquired (Jones & Brandt, 2019)
- Infants may preferentially acquire form-identical cognates (if present) first, then form-similar cognates.

- Word-learning in bilinguals seems to be facilitated by phonological similarity (Gampe et al., 2021; Havy et al., 2016; Sheng et al., 2016)
- Cross-language word learning may be easier for bilingual infants who are learning close language pairs.



Conclusion

- There is a cognate advantage in bilingual infants, even in more distant languages which share less phonological similarity.
- We may need to have different expectations for language production for bilingual infants learning different language pairs.

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