Outline

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## Monolingual lexical acquisition

Lexical acquisition starts before the end of the first year of life (Jusczyk and Aslin 1995; Bergelson and Swingley 2012). During the second year, words are encoded with increasingly finer phonological detail (e.g., Werker et al. 2002), and establish connections with other phonologically and semantically related words (e.g., Mani and Plunkett 2010; Wojcik and Saffran 2013). This connectivity constrains lexical acquisition: words with higher connectivity are more likely to be acquired next, compared to words with poorer connectivity (Hills et al. 2009; Fourtassi, Bian, and Frank 2020). There is evidence that bilingual toddlers also establish cross-language connections between words (e.g., Von Holzen and Mani 2012) as adults do (e.g., Costa et al. 2000), but how these connections shape toddlers’ trajectory of vocabulary growth is still unclear.

## Bilingual lexical acquisition

### The role of translation equivalents

Compared to their monolingual peers, bilingual children know fewer words in each of their languages, but as many words when both languages are taken into consideration (Hoff et al. 2012). Critically, bilinguals’ conceptual vocabulary is smaller and grows more slowly than monolinguals’ (Core et al., 2013). Taken together, these results suggest that bilinguals’ vocabulary contains a considerable amount of translation equivalents (Bilson et al. 2015): monolinguals and bilinguals learn words at a similar rate, but some of bilinguals’ words refer to the same concepts. This points to translation equivalents as playing an important role during lexical acquisition in the first years of life: learning a word for one concept facilitates the acquisition of words for the same concept in the other language.

### The role of phonological similarity

Floccia et al. (2018) found that toddlers learning two languages whose translation equivalents were, on average, phonologically more similar (e.g., English-Dutch) showed larger vocabulary sizes than those learning a pair of languages whose translation equivalents were less similar (e.g., English-Chinese). Interestingly, this facilitation effect was only found in the vocabulary size of bilinguals’ non-dominant language, that is, the language of least exposure. The authors, however, did not discuss the mechanisms underlying this facilitation effect, or why it seems to be modulated by toddler’s amount of exposure to each language.

## Our study

We argue that phonological similarity may facilitate the acquisition of translation equivalents, and that this effect takes place once one of the words of the translation equivalent is acquired in one language, so that its translation can benefit from their phonological similarity. This could partially explain why Floccia et al.’s effect was only present in the language of least exposure: since word-forms in the dominant language are more likely to be acquired earlier (due to larger amounts of exposure) the effect of form-similarity should be larger in the non-dominant language. To test this account, we collected vocabulary data from a sample of Catalan-Spanish bilinguals aged 12 to 36 months, and modelled the likelihood of each translation equivalent to be acquired given several predictors of interest.

### Predictions

We tested the role of three variables: language dominance, bilingualism, and cognateness, and their interactions (while also adjusting by the age of participants and lexical frequency of the items), with the following predictions:

1. *Language dominance* (dominant language/non-dominant language): Words are more likely to be acquired in the dominant language (language of most exposure) than in the non-dominant language.
2. *Bilingualism* (% of exposure to a second language): The effect of *language dominance* is mediated by the amount of exposure to a second language: toddlers with equal exposure to both languages (50-50%, balanced bilinguals) should be equally likely to acquire a translation equivalent in either language, while toddlers with little exposure to their non-dominant language (e.g., 10%, unbalanced bilinguals) should be more likely to learn words in the dominant language than in the non-dominant language.
3. *Cognateness* (cognate/non-cognate): Cognate translation equivalents are more likely to be acquired than non-cognates, and this effect is larger in the non-dominant language, and in bilinguals with lower exposure to the second language.

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