

Sentential context impacts bilingual speech-in-speech recognition

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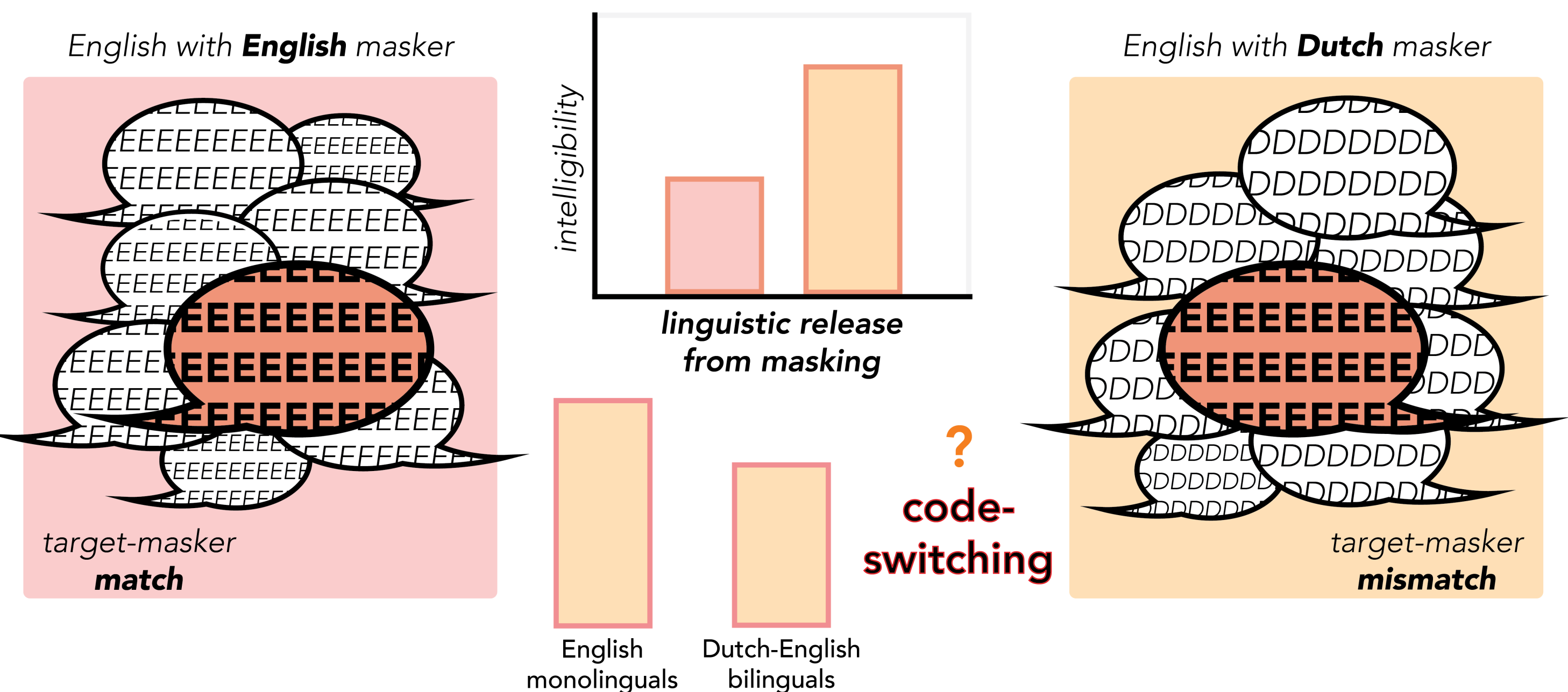
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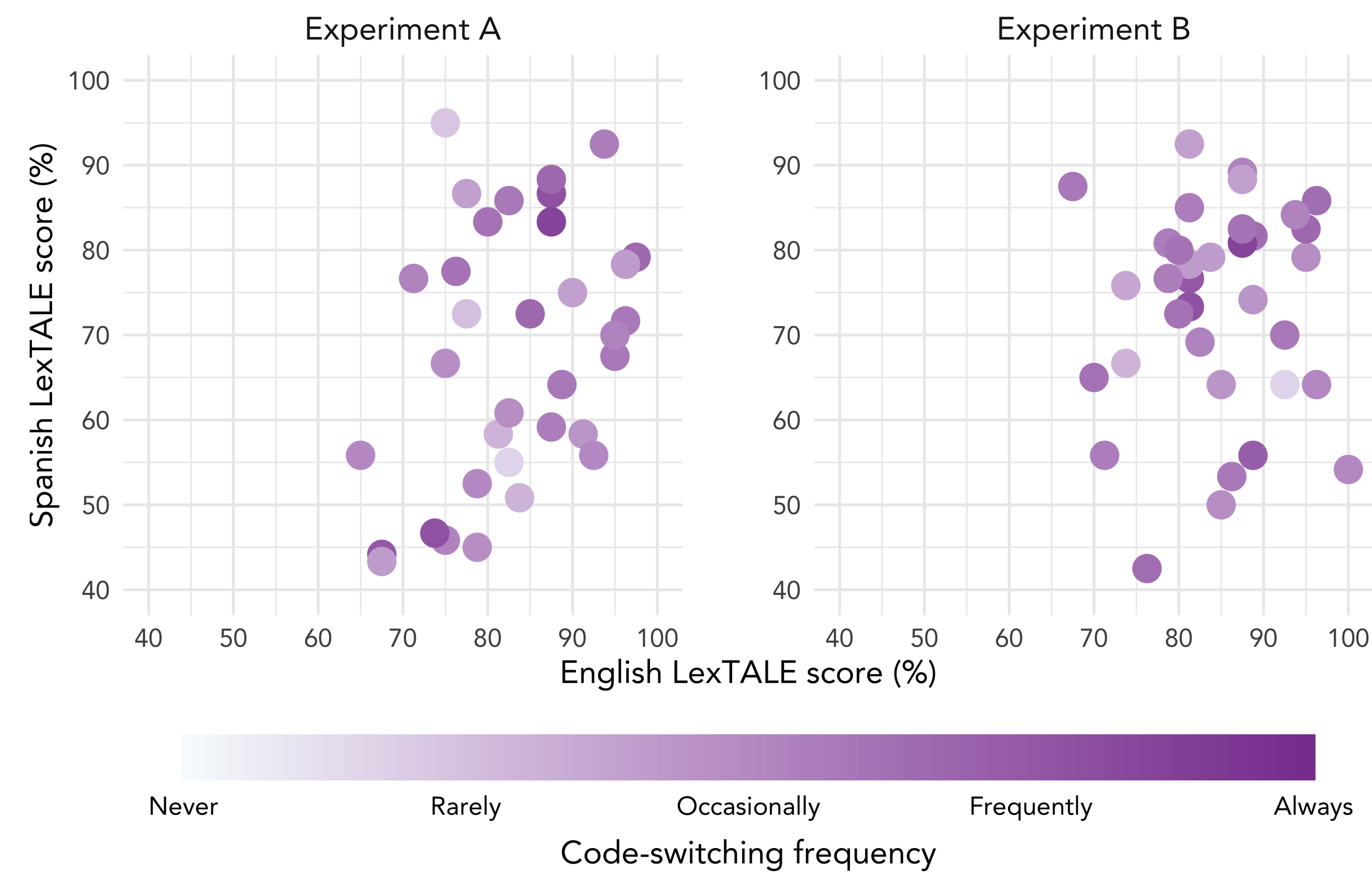
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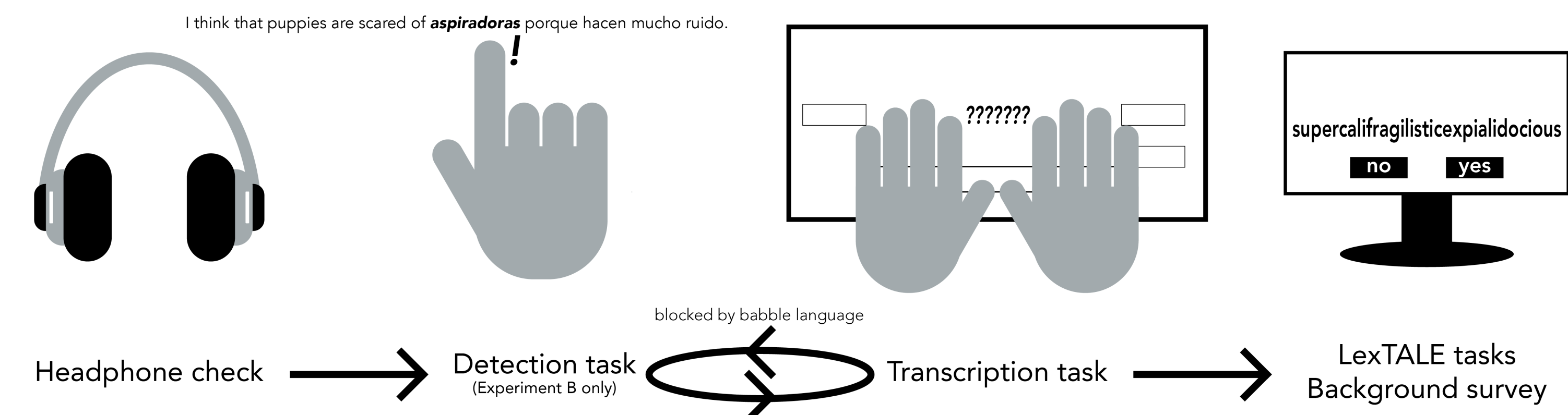
Research background



Participants

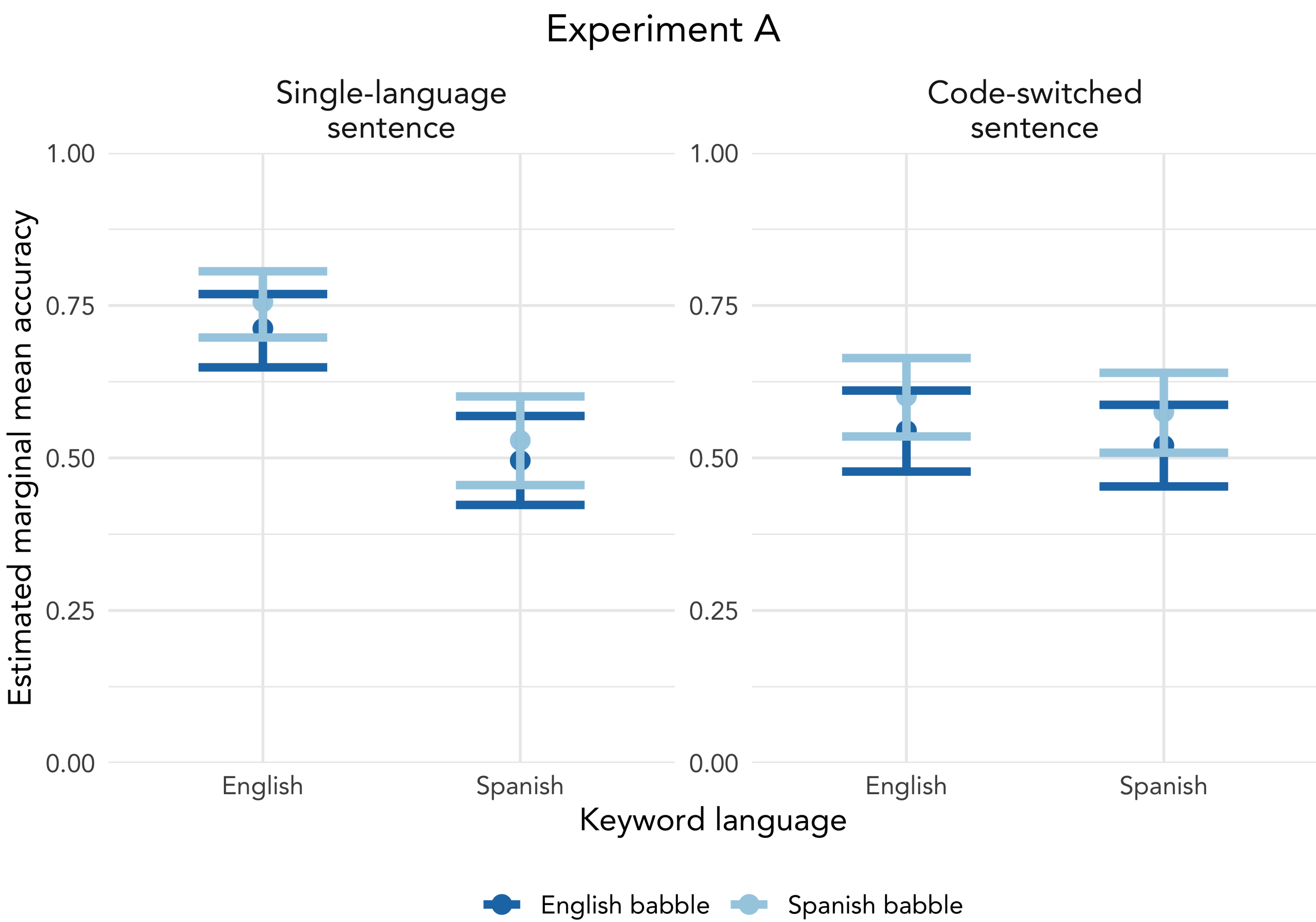


Procedure

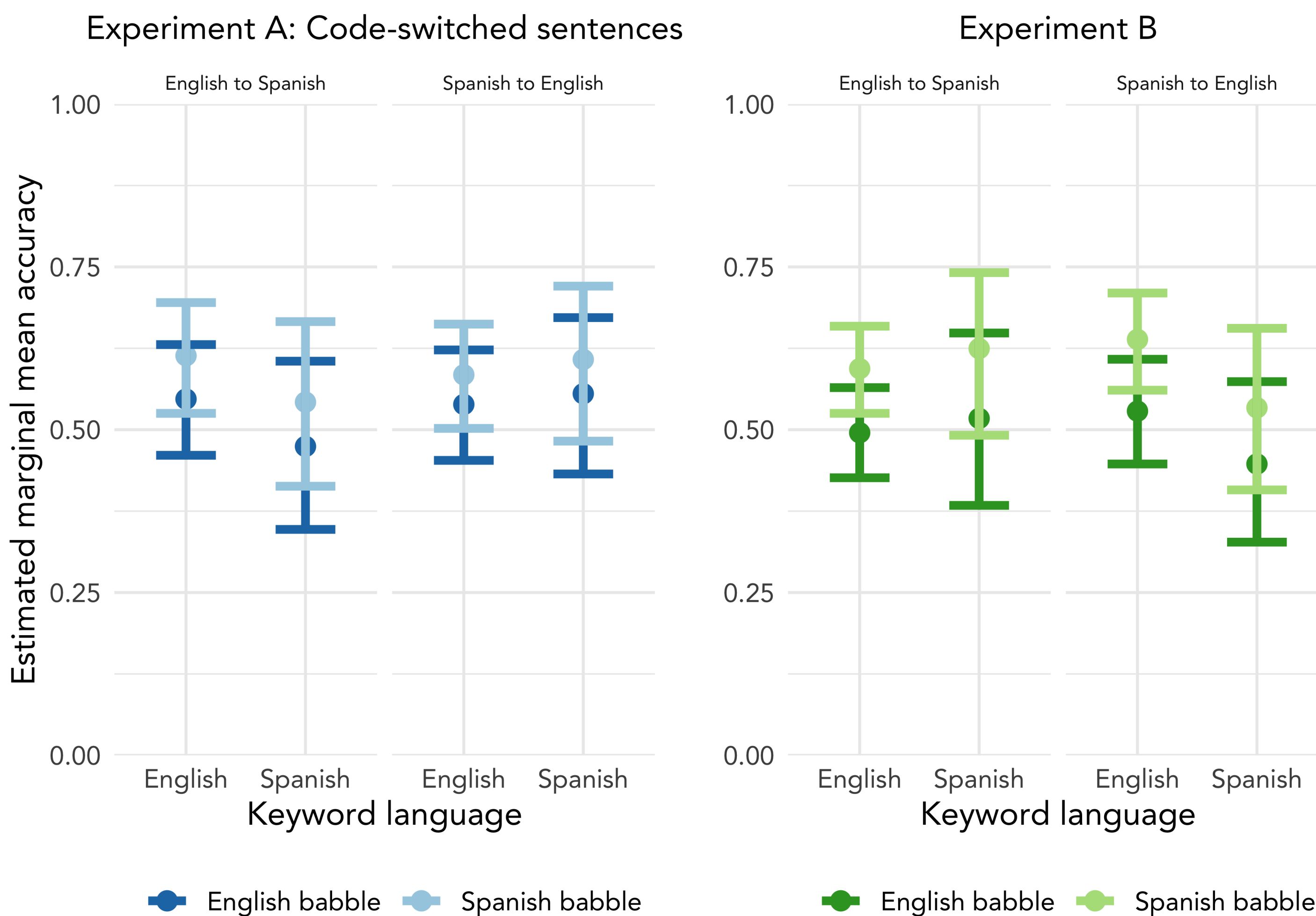


Analyses

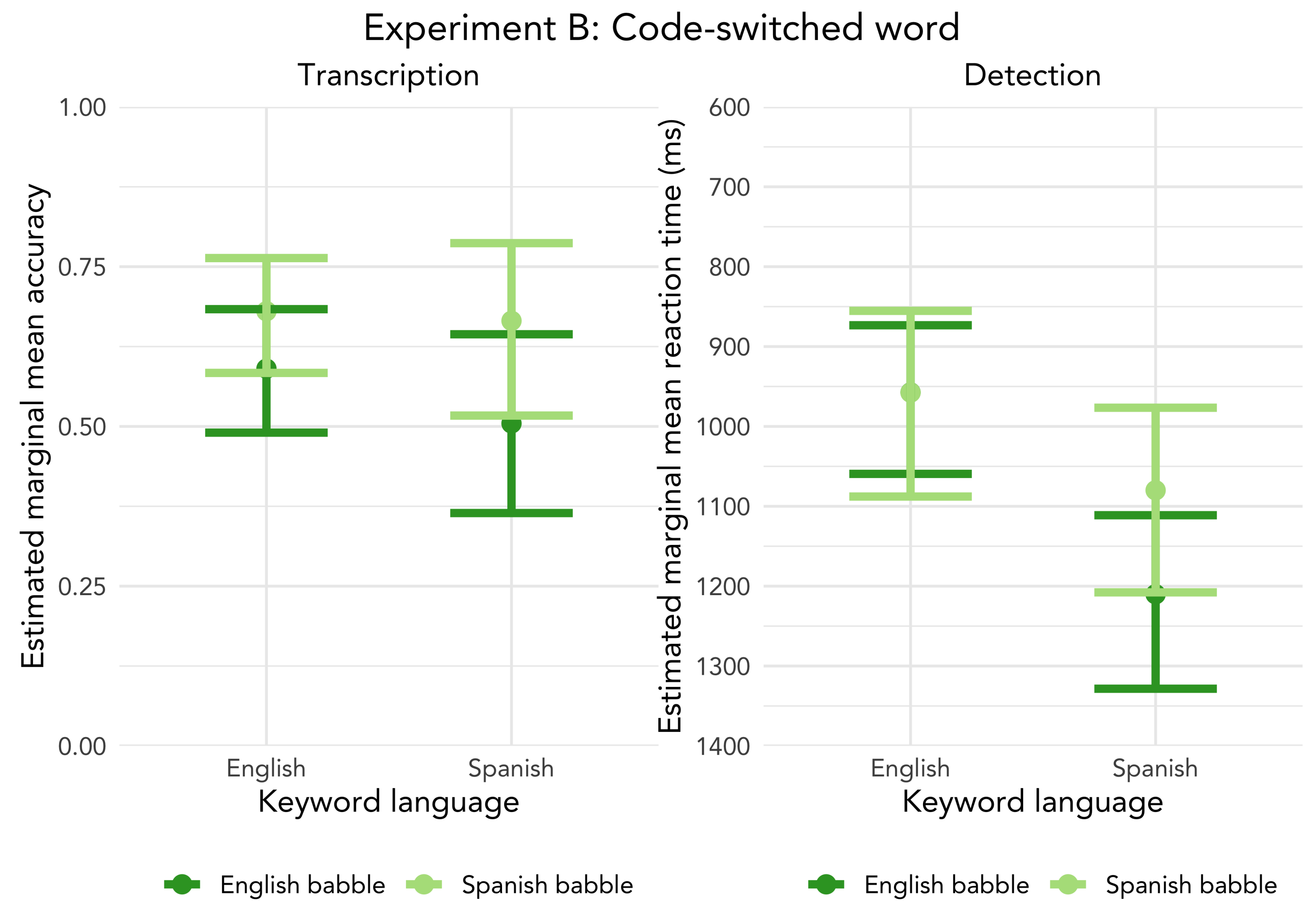
Accuracy benefit for English versus Spanish decreases by ~20% in code-switched versus single-language sentences



Removing single-language stimuli shifts transcription advantage from pre-switch keywords to post-switch keywords



Code-switched Spanish words are more sensitive to masker language than code-switched English words



Stimulus examples

Experiment	Sentence type	English critical word	Spanish critical word
A	Single-language	I think that puppies are scared of <i>vacuums</i> because they are <i>loud</i> .	Creo que los <i>cachorros</i> tienen <i>miedo</i> de las <i>aspiradoras</i> porque hacen mucho <i>ruido</i> .
B	Code-switched	Creo que los <i>cachorros</i> tienen <i>miedo</i> de los <i>vacuums</i> because they are <i>loud</i> .	I think that <i>puppies</i> are scared of <i>aspiradoras</i> porque hacen mucho <i>ruido</i> .

Result summary

Experiment	Analysis	Measure	Level	Context	Prediction	Observation
A	1	Transcription (accuracy)	Sentence	Single-language versus Code-switch	Incongruent Target-Masker benefit attenuated by code-switching	Target-Context interaction with Masker main
B	2-3			Spanish-English versus English-Spanish code-switches	Incongruent Target-Masker benefit	Congruent Target-Masker benefit for Spanish
B	4	Detection (RT)	Word	Spanish-English versus English-Spanish code-switches	Incongruent Target-Masker benefit	Congruent Target-Masker benefit for Spanish
B	5					

References and acknowledgements

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Lecumberri, M. L. G., Cooke, M., & Cutler, A. (2010).
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Keyword accuracy (1,0) and RT (inverse transformed) analyzed via linear mixed-effects models controlling for keyword position, language dominance (difference between English and Spanish LexTALE), and code-switching frequency (mean of L1-switch, L2-switch, and contextual switch responses on bilingual switching questionnaire; see Rodriguez-Fornells et al., 2012)