

Do Bilingual Switching Patterns Shape Memory for Topics and Speakers?

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1 Introduction

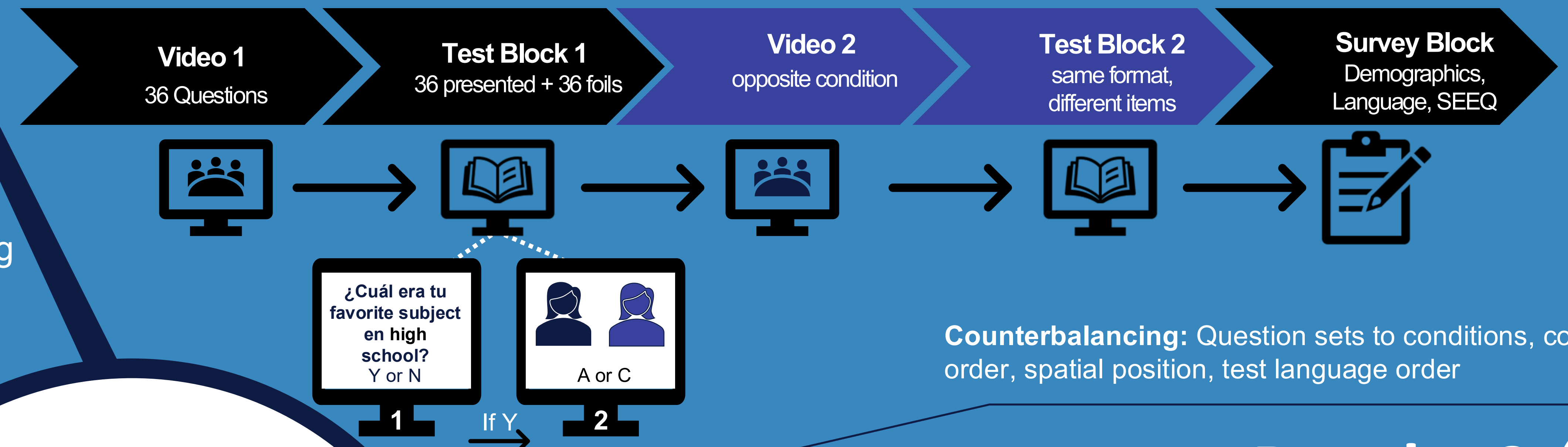
- Bilinguals adapt to both dual-language and dense code-switching contexts: in dual-language settings each partner stays in one language, whereas in dense code-switching partners mix languages.
- Dense code-switching can be more cognitively demanding during comprehension because unpredictable switches disrupt language prediction mechanisms¹²³.
- We predicted that memory would differ across contexts: greater processing effort would lead to less accurate memory²⁴.

Predictions:

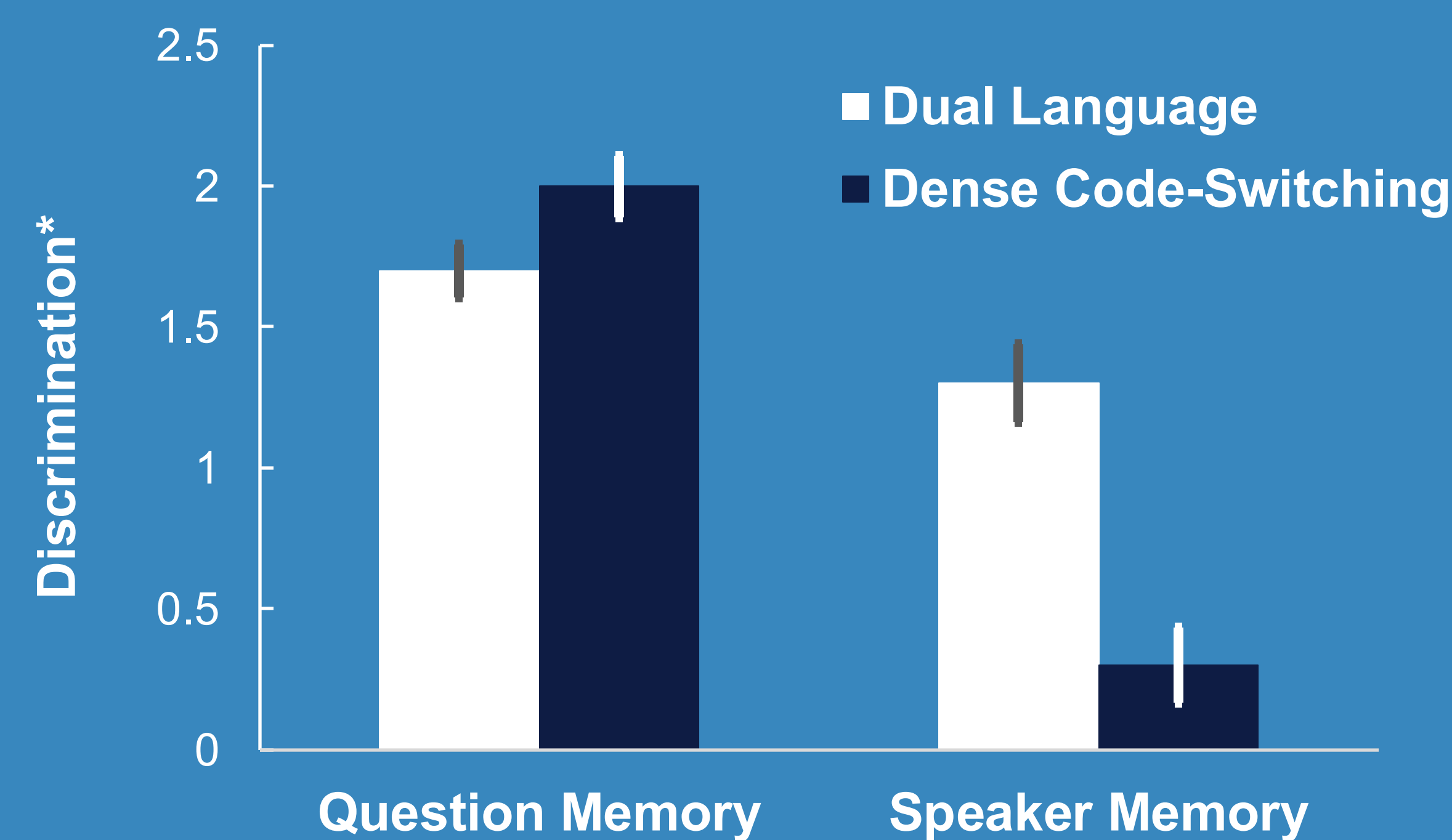
- Dense code-switching → **lower memory accuracy**
- More code-switching experience → **reduced memory disadvantage**

2 Methods

- Videos showed 3-person interactions. In the *dual language* condition, one questioner spoke English and one spoke Spanish; in the *dense code-switching* condition, all speakers mixed English and Spanish.



3 Results 1



Relative to dual language, dense code-switching condition had

- Higher memory accuracy for questions in conversation (d_a)
- Lower memory accuracy for speakers in conversation (d'_{FC})

* d_a : accuracy for question

* d'_{FC} : accuracy for speaker

Error bars represent ± 1 standard error of the mean (SEM)

Yes!
Switching habits shape how bilinguals remember conversation questions and speakers.

5 Conclusions

- Dense code-switching does not impair memory for what was said.** Bilinguals were just as accurate at remembering conversation content in both language contexts.
- Dense switching selectively weakens memory for speakers.** This suggests that increased processing demands may disproportionately affect source memory compared to item memory.
- Experience may buffer the demands of dense code-switching.** This raises the possibility that dense switching may be less effortful for some bilinguals than previously assumed.

4 Results 2

Correlations of experience with memory measures in dense code-switching condition

Memory Measure	% time in dual language	% time in dense code-switching
Question d_a	0.105	0.094
Speaker d'_{FC}	-0.122	0.245*

- In the dense code-switching condition, participants who reported more time in dense code-switching contexts tended to have better speaker memory (not significant with Bonferroni correction)

Participants (N = 72)

Characteristic	Mean (SD)
Age	22.9 (5.1)
English AoA	6.0 (4.2)
Spanish AoA	1.5 (1.8)
English WMLS*	16.8 (7.0)
Spanish WMLS*	15.3 (5.6)
Language Context Experience	
Dual Language: 45% (SD = 30%)	Dense Code-Switching: 11.0% (SD = 10%)

*Oral Language age equivalency score

References: [1] Farooqi-Shah, Y., & Wereley, P. (2021). Investigation of code-switching cost in a conversation task. *International Journal of Bilingualism*, 26(1). <https://doi.org/10.31234/osf.io/2z86e> [2] Green, D., & Abutalebi, J. (2013). Language control in bilinguals: The adaptive control hypothesis. *Journal of Cognitive Psychology*, 25(5). <https://doi.org/10.1080/20445911.2013.796377> [3] Rayo, A., Liu, M., & Valdés Kroff, J. (2024). The Complexity in Bilingual Code-Switching Research: A Systematic Review. *Languages*, 9(1). <https://doi.org/10.3390/languages9060217>. [4] Tsuboi, Y., & Francis, W. S. (2025). Who said what to whom? Memory for sources and destinations in monolinguals and bilinguals. *Memory & Cognition*, 53, 606-627. <https://doi.org/10.3758/s13421-024-01589-6>

