

Cross Language Influences in Different Script Bilinguals : Phonology and Lexicon

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Background

- Language processing is influenced by knowledge of additional language(s), a phenomenon called Cross Language Influence (CLI) (Odlin, 1989).
- CLI is a ubiquitous feature of bilingual language processing, can be evident as facilitation or hindrance in processing, and is documented in phonology (Bohn & Flege, 1992) and lexicon (Dijkstra & Van Heuven, 2002).
- Different script bilinguals, who might more easily suppress activation of one language when processing written stimuli, might show weaker CLI than same script bilinguals, but more evidence is needed (Degani et al., 2018; Miwa et al., 2014).
- Most extant evidence documents CLI in a single domain of language. One study did not find commonalities in how CLI operates across lexicon and grammar (Prior et al., 2017).
- Here we investigate possible commonalities and differences in CLI in phonology and lexicon in different script bilingual Hebrew-English young adults.

Research Questions

- Do different script bilinguals show CLI from L1 during L2 processing of phonology and lexicon, or can they suppress language activation?
- Are individual differences in the strength of CLI in phonology correlated with the strength of CLI in lexicon, suggesting shared mechanisms?
- Is CLI in both domains affected by the level of L2 proficiency, suggesting reduced influence for more proficient learners?

Method

Participants: 40 Hebrew-English bilingual university students, who had formally studied English as a foreign language from age 8.

Tasks:

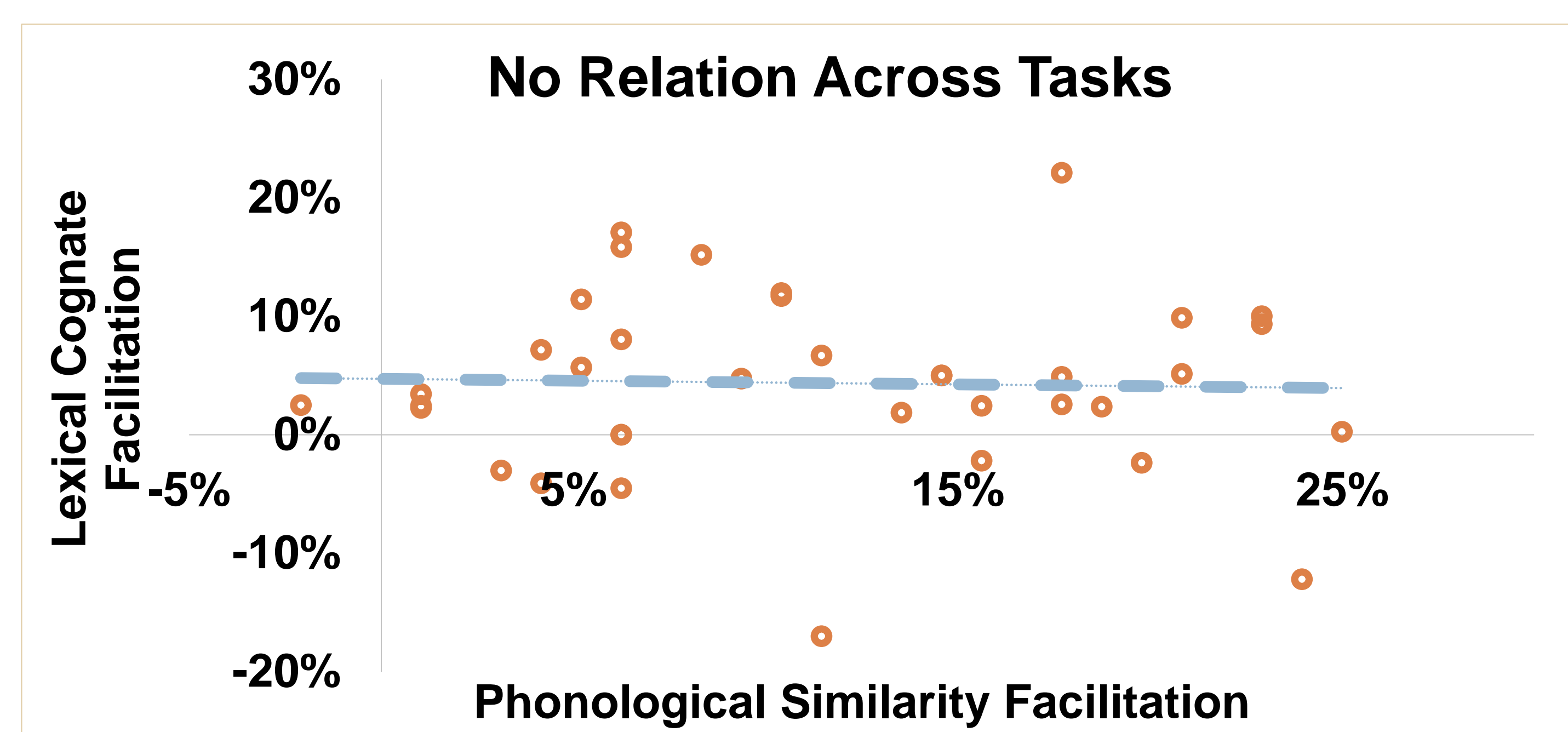
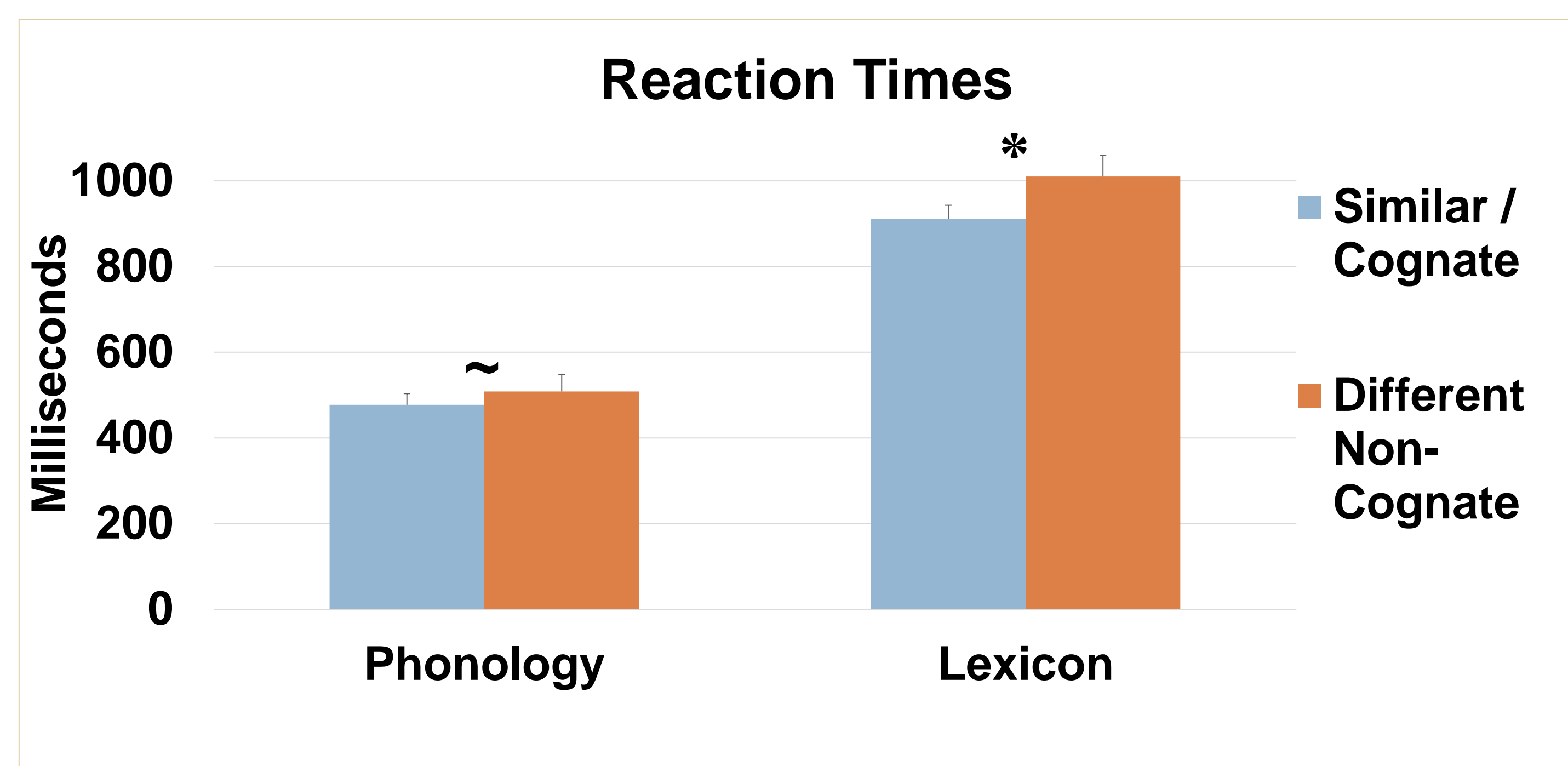
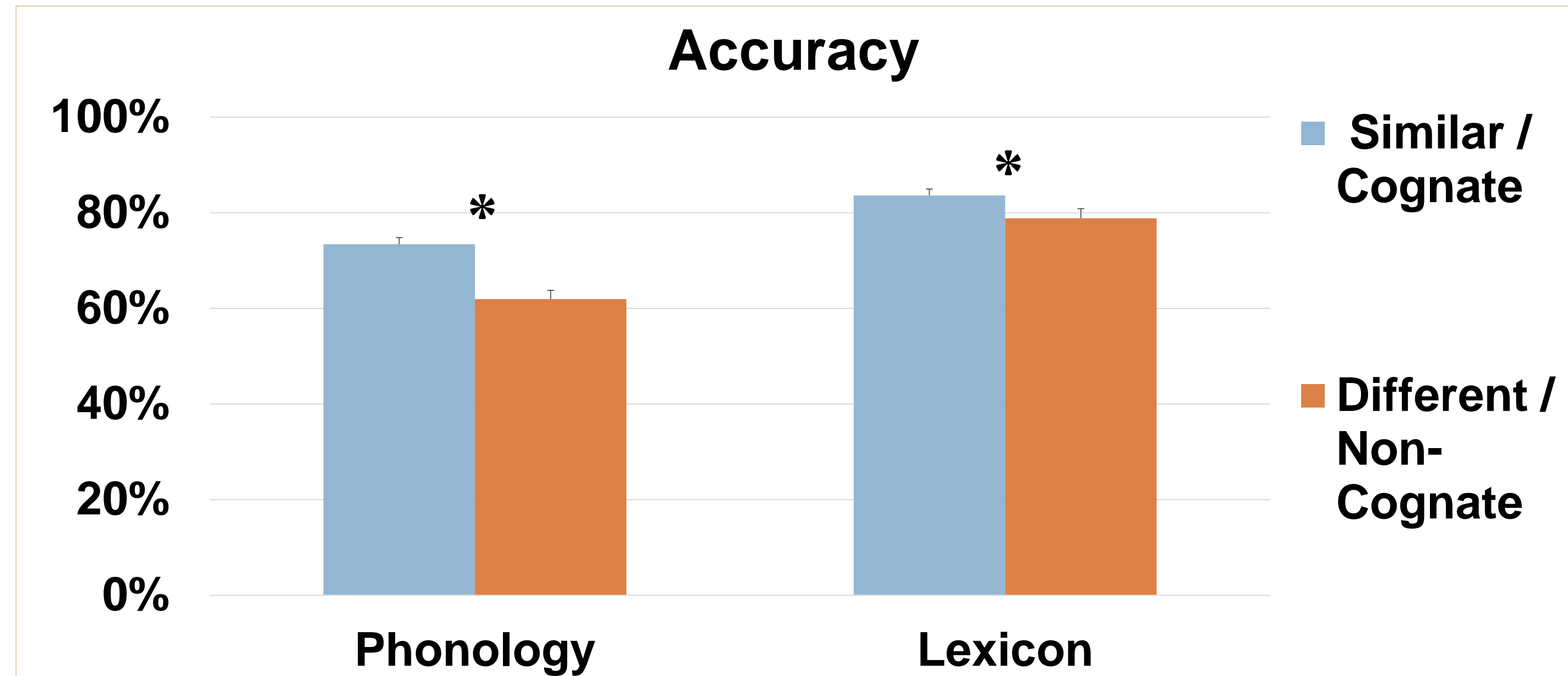
- English proficiency (Levels vocabulary test, Nation & Beglar, 2007) and use (Self Report)**
- Phonological oddity** – participants heard 3 words, constructed using minimal pairs, and had to determine whether one was different. Phonological contrasts were shared with L1 (similar) or unique to L2 (different). The task included 192 trials.

Condition	L1/L2 Different		L1/L2 Similar	
L1 (Hebrew)	N/A	N/A	מ/נ	ד/ת
L2 (English)	t/θ	ɪ/i:	m/n	t/d
Examples	tree/three	slip/sleep	moon/noon	sat/sad

- Semantic relatedness** – participants read two consecutive words, and had to decide whether they were related in meaning. The first word (prime) was a cognate or a non-cognate across Hebrew and English. The task included 108 critical items, and 108 unrelated filler pairs (e.g. swing-job).

	Non-Cognate Prime	Cognate Prime
Stimuli	Cereal-Milk	Yogurt-Milk
Hebrew Transliteration	Dganim-Xalav	Yogurt-Xalav

Results



Conclusions

- Strong CLI from L1 (Hebrew) during L2 (English) processing, both in phonological discrimination and in semantic judgment of written words. Thus, despite differences in script, which could have functioned as an unambiguous cue to language membership, we still see activation of both languages.
- No correlation between strength of CLI across the phonological and the lexical domains, raising the possibility that CLI might not be managed by domain general inhibitory mechanisms (cf. Prior et al., 2017).
- Strength of CLI was not modulated by L2 proficiency or use, but the population was rather homogeneous.
- Future research should examine populations with higher variability and extend to additional language domains (e.g. morpho-syntax).

References

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