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Language-specific Buffers in Bilingual Working Memory

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Abstract: The significance of phonology for retaining verbal materials in working memory (WM) has been well documented in monolinguals. However, there has been limited research addressed to this issue in bilinguals. Previous research has indicated separate lexicons for each language in bilinguals; the present study aimed to investigate whether separate buffers exist for each language in bilingual WM by considering the phonological interference within and across languages in Mandarin-English bilinguals. We employed monosyllable, rhyming Mandarin characters and English words pairs (e.g., /wei4/ stomach-/lay4/ tear vs. day-bay) for creating bilingual wordlists, and measured the accuracy and response time on a serial probed recall task. Our bilinguals revealed superior accuracy and response time when the probe and target were within the same language. The findings are consistent with the results of a Spanish-English bilingual study in our lab that also indicated separate buffers in bilingual WM.