Phonological Overlap Connects Semantically-Unrelated Concepts: Evidence from Neural Correlates of Language Co-activation

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Abstract

Language co-activation can strengthen associations between unrelated concepts. We tested whether cross-linguistic phonological overlap impacts semantic processing of non-overlapping written inputs. English monolinguals and Korean-English bilinguals were presented with an interlingual homophone (e.g., "moon") and a word that is either semantically related (e.g., "lock" – "moon," the sound /mu:n/ means "door" in Korean, which is semantically related with "lock") or unrelated across languages (e.g., "fork" – "moon"). While their EEG was recorded, participants had to judge whether the word pairs were semantically related. A smaller N400 effect (difference in ERP amplitude between related and unrelated word pairs) was found in bilinguals than monolinguals, especially for word pairs related in meaning across languages. We conclude that phonological links across languages can connect unrelated concepts, reshaping the lexico-semantic network.

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