Native-Like L2 Morphological Processing of Derived English Words: An ERP Study

Jonah Lack, Sui Lung Sze, Yoonsang Song

This study investigates L2 processing of English derived words to examine the role of morphology in L2 lexical processing. During an overt visual priming experiment, we recorded EEG signals from highly advanced L1 Cantonese English speakers (*n* = 9) and L1 English speakers (*n* = 20), testing priming to three different types of prime-target pairs: morphologically related (*swiftly-swift*), only semantically related (*explode-burst*), and only orthographically related pairs (*surgeon-surge*). L1 ERP analysis showed distinct processing patterns for each type of prime-target pair, suggesting that morphology, semantics, and orthography affect lexical processing in different ways. Morphological priming occurred as an attenuated N250 (250-350ms) and N400 (350-550ms). Orthographic priming occurred as an attenuated N250 and a shorter, less attenuated N400 (350-500ms) compared to morphological priming. Orthographic priming yielded an inhibitory effect in the form of a late negativity (LN) (450-650ms). Semantic priming only occurred as an attenuated N400 (350-550ms) and was weaker than the morphological priming effect. L2 learners replicated these distinct processing patterns, with some quantitative differences: Their N400 and LN effects were delayed and shorter-lived (400-600ms and 600-800ms, respectively). These results suggest that advanced L2 derived word processing mainly relies on morphology, not over-relying on semantic or orthographic information.