Effect of orthographic cues in activating phonological syllables during reading.

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The current study investigated whether readers use orthographic clues to recover phonological syllables when reading multisyllabic words. For some English words, the orthography provides a clear indication of the phonological syllable boundary (e.g., com-rade; not co-mrade or comr-ade), but the syllable boundary is not clearly marked in the orthography of other words (e.g., plas-tic; could be pla-stic or plast-ic). A syllable congruency paradigm was used in which disyllabic words were presented in two colours that either matched or mismatched the syllable boundary. If readers recover phonological syllables when reading, then they should have a harder time reading words when the colour boundary does not match the syllable boundary than when it does match. Furthermore, if phonological syllable information is more likely to become available when syllables are clearly marked in the orthography, then the syllable congruency effect should be larger with such words than for words without clear syllable boundaries. In Experiment 1 participants named words aloud. In Experiments 2 and 3 they read words (and nonwords) silently and made lexical decisions. Experiment 3 also assessed brain activity using event-related potentials (ERP). Behavioural results from all experiments found no evidence of syllable congruency effects. However, there was a syllable congruency effect in the ERP data for words that have clear syllable boundaries. This finding suggests that skilled readers use knowledge of orthographic clues to syllable structure when reading to enhance the quality of the phonological representations of multisyllabic words.