L2 Masked Morphological Priming is Not Just Orthographic: Hyphenation Distinguishes Inflected and Orthographic Words

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When it comes to the processing of morphologically complex words, there is a debate as to whether native (L1) and non-native (L2) readers use the same processing mechanisms. While L1 readers, who show masked priming effects for morphological but not orthographic items, are seen to 'strip off' affixes (e.g., Rastle, Davis, & New, 2004), L2 readers, who recognise targets faster after both morphological and orthographic primes, might rely on orthographic rather than morphological information (e.g., Heyer & Clahsen, 2015). Introducing an innovative way to tease apart the contributions of morphology and orthography, the present study uses hyphens to make morphological structure visible (e.g., *ask-ed*) and to impose the same kind of 'decomposition' for orthographic items (e.g., *ask-ew*). While the first consists of two meaningful elements (i.e., the stem *ask* and the past tense suffix *-ed*), the second contains a part without semantic value (i.e., *-ew*).

In a masked priming experiment, 45 German late L2 learners of English[1] were asked to make lexical decisions on 50 verbs preceded by inflected and purely orthographically related primes, each spelt normally or with a hyphen (see Table 1 for examples).

LMER analyses with the 5-level factor Prime Type (baseline: unrelated) revealed that priming for orthographic hyphenated items was only marginal (t=1.74), while it was reliable following the other prime types (ts>2.99; cf. Table 1). Relevelling to inflected primes as baseline showed comparable RTs for normal and hyphenated inflected primes (t=1.10), while facilitation for orthographic primes was reduced – especially when the prime was hyphenated (normal: t=1.67; hyphenated: t=2.97).

These results indicate that L2 readers detect embedded 'stems' (i.e., shared initial letters that form existing words) in both inflected and purely orthographically related items. However, when these shared letters are set apart visually through hyphenation, facilitation is significantly reduced when the second element (i.e., *-ew* in *ask-ew*) by itself does not carry semantic value but not if hyphenation shows morphological structure (as in *ask-ew*). To conclude, L2 readers do not simply detect shared (initial) letters that form existing words but also rely on morphological structure.

[1] Data collection with native English speakers as control group had to be interrupted due to Covid19 restrictions.

Table 1. Mean lexical decision times in milliseconds (backtransformed from inverse RTs) and priming effects (compared to the unrelated condition) by prime type

Prime Type	Example	Mean RT	Priming Effect
Inflected normal	*asked – ASK*	584	44*
Inflected hyphenated	*ask-ed – ASK*	593	35*
Orthographic normal	*askew – ASK*	595	33*
Orthographic hyphenated	*ask-ew – ASK*	613	$15^{(*)}$
Unrelated	*scala – ASK*	628	

* $t > 2$ $^{(*)}$ $1.65 > t < 2$

References

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