

The influence of task constraints on morphological processing during written word production

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A large number of studies have shown the influence of morphemes in visual word recognition (Amenta & Crepaldi, 2012). By contrast, the influence of morphemes on written word production has been far less studied. Kandel et al. (2012) have shown that adults process derivational morphemes when writing (see also Bertram et al., 2016). This processing may interfere with written word production before beginning to write (increasing latencies) and/or during writing (increasing inter-letter interval durations). In this study, we examined whether the time course of morphological processing when handwriting depends on the nature of the task performed.

Thirty adults wrote two types of words in uppercase letters on a digitizer: morphologically complex words (e.g., voleur, “thumb”) and simple words (e.g., abricot, “apricot”). These words were presented in two different tasks: a written picture naming task and a spelling-to-dictation task. We measured two dependent variables: writing latencies (i.e., the time between stimulus presentation and the beginning of writing) and inter-letter interval duration at the morphemic boundary (e.g., the time between the l and the e in vol/eur).

Longer writing latencies were observed for morphologically complex words in the naming task than in the spelling-to-dictation task. The task also influenced within-word variables: inter-letter intervals at the morphemic boundary were longer for morphologically complex words in the spelling-to-dictation task than in the naming task.

To conclude, the time course of morphological processing depends on the constraints of the task. When orthographic retrieval requires early semantic activation (i.e., the naming task), morphological effects are observed earlier than when semantic activation is not mandatory (i.e., spelling-to-dictation task). The differential involvement of semantic codes in the two tasks modulates the influence of morphological information during written word production.

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