Do syllables matter in visual word recognition? German evidence extended and reviewed.

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Prior research

The syllable frequency effect was claimed in speech production to be facilitatory (Levelt, & Wheeldon 1994).

In contrast syllable frequency showed an inhibitory effect in a lexical decision task conducted in Spanish (Carreiras, Álvarez, & de Vega 1993; Perea, & Carreiras, 1998). Words and nonwords starting with a high frequency syllable showed slower response times compared to words and nonwords starting with a low frequency syllable. These findings suggest that visual word recognition involves the identification of the syllables in the word and the activation of corresponding phonological units.

“What seems clear is that any model of lexical access has to incorporate a syllabic level of representation or include the syllable as a sublexical unit of processing in Spanish” (Álvarez, Carreiras, & Taft, 2001, p. 553).

Prior evidence from German

An inhibitory effect of first syllable frequency has been observed in German using a lexical decision task (Conrad, & Jacobs, 2004; Conrad, Stenneken, & Jacobs, 2006). Results from Conrad and Jacobs (2004, experiment 1) are presented here.

Experiment 1

The first experiment replicated Conrad and Jacobs’ (2004) study with carefully chosen items to avoid the confounds spotted in that study.

The data do not show a syllable frequency effect, either inhibitory or facilitatory, either in nonwords or words. This challenges the claim that computational models need to include a level of syllabic units. Other effects were present in the data, e.g. a length effect of about 16 ms per letter.

Experiment 2

The second experiment investigated the effect of embedded words and syllable frequency. Preliminary results are presented here.

The finding that the frequency of the first syllable does not affect reaction times was replicated with a different set of items.

Conclusion

In Experiment 1 and 2 we failed to replicate an inhibitory syllable frequency effect. Instead, we found that short high frequency words embedded at the beginning of target words affect reaction times in an inhibitory fashion. We conclude that computational models do not need to incorporate a syllabic level, but instead have to account for lexical interference effects.

References


