

# Affix Priming and the Visual Identification of Complex Words

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## Introduction

Several studies have attempted to unveil masked affix priming, but results remain controversial. Significant priming was found by Dunabeitia, Perea and Carreiras (2008) while comparing prime-target pairs that shared a suffix (*brevedad--igualdad*, brevity-EQUALITY) to unrelated, monomorphemic controls (*plumaje-IGUALDAD*, plumage-EQUALITY). The same effect did not emerge in monomorphemic prime--target pairs that shared a non-morphological ending (*certamen-VOLUMEN*, contest-VOLUME vs. *topacio-VOLUMEN*, topaz-VOLUME), thus proving the morphological nature of the phenomenon. However, Chateau, Knudsen and Jared (2002) failed to report prefix priming in English over and above orthographic effects.

## Materials and Methods

The present study is a further evaluation of affix priming effects in a masked priming paradigm (SOA = 42 ms) with English materials, where nonword primes and word targets sharing a suffix (towerful-FAITHFUL) were contrasted with both morphological (towerism-FAITHFUL) and non-morphological (towerpak-FAITHFUL) unrelated controls. Three further conditions with monomorphemic targets were set up so as to control for pure orthographic effects (muskach-SPINACH vs. muskful-SPINACH vs. muskesp-SPINACH).

Complex and simple targets were equated for written and spoken frequency, length, number of syllables, N, and bigram frequency. Suffix onsets and the onsets of their non-morphological controls always lay at a syllable boundary. Related and control primes were matched for length, bigram frequency, N, and orthographic overlap with the target.

## Results and Discussion

Mixed-effects model analysis revealed a significant effect of relatedness ( $F[2,2995]=8.09$ ,  $p<.001$ ) and a significant interaction between relatedness and morphological structure ( $F[2,2995]=3.57$ ,  $p=.03$ ). In order to specify the nature of this interaction, further mixed-effects models were fit separately to complex and monomorphemic target data. While no effect emerged in the simple-target conditions, RTs were faster in the towerful-FAITHFUL condition than in both the towerpak-FAITHFUL ( $\beta=-.04$ ,  $t[1507]=-2.31$ ,  $p=.01$ ) and the towerism-FAITHFUL conditions ( $\beta=-.08$ ,  $t[1507]=-4.42$ ,  $p<.001$ ).

These results show that affixes determine facilitation in masked priming, lexical decision experiments, similar to what stems do. Therefore, they favor theories of the visual identification of complex words that suggest a symmetry of representation between stems and affixes, and challenge those models where affixes are quickly stripped off and stems serve lexical access.

## References

- Dunabeitia, J. A., Perea, M., & Carreiras, M. (2008). Does darkness lead to happiness? Masked suffix priming effects. *Lang. Cognitive Proc.* 23, 1002–1020.
- Chateau, D., Knudsen, E. V., & Jared, D. (2002). Masked priming of prefixes and the influence of spelling-meaning consistency. *Brain Lang.* 81, 587–600.