Do you see the -ing in SMOYING? Individual Differences in Nonword Processing

Julia Schwarz (js2275@cam.ac.uk), Mirjana Bozic & Brechtje Post

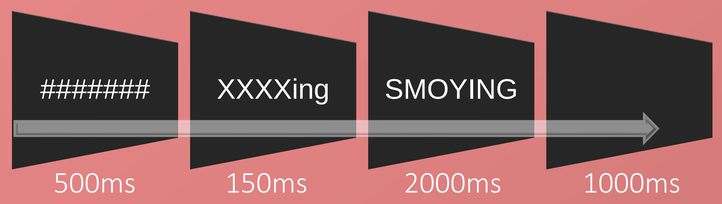
Does activation (priming) of inflections facilitate reading nonwords?

Do individual reading differences influence processing strategies?

Background

- strong evidence that morphemes, especially stems, play a facilitating role in reading[1]
- inconclusive evidence as to whether inflections facilitate access independent of the word stem in English[2,3]
- morphological priming effects in derived real words were stronger in subjects with lower reading proficiency[4,5]
- nonwords cannot be stored in the mental lexicon and as such allow us to reduce semantic interference from stems and instead focus on the inflections in question

Methods & Materials



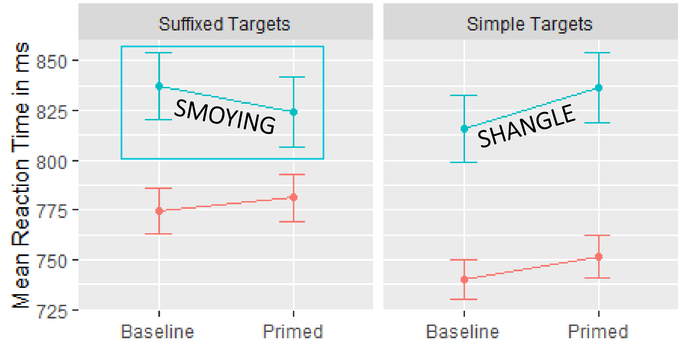
- 150ms visual prime + lexical decision
- pseudo-inflected nonwords (**SMOYING**) vs. simple targets (**SHANGLE**)
- each target preceded by baseline string or embedded prime (48 targets per condition)
- results from 80 native English speakers

Results

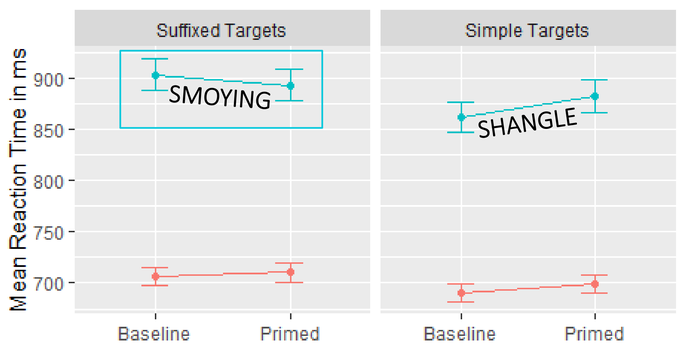
Only subjects with a high error rate and slow readers show morphological priming (=facilitation) of suffixed targets.

I. -13ms, b=.04, t(2859)=2.70, p=.007 &
II. -10ms, b=.03, t(3038)=2.18, p=.029

I. Subjects with high vs. low error rate



II. Subjects with slow vs. fast reaction times



Discussion

- inflection primes facilitated processing of nonwords sharing the same suffix, but the data suggest that this process may not be obligatory
- morphological priming was modulated by subjects' response speed and error rates
- only subjects with high error rate and slow responses showed morphological priming, and these measures have been associated with lower reading proficiency (vocabulary size, reading skill)[4,5,6]
- results are in line with previous research which found priming differences between morphologically derived and simple targets only for readers with lower proficiency[4,5]

Conclusion

Subjects with a smaller vocabulary and lower reading skill might be **less efficient in orthographic decoding**, and as such benefit from morphological activation (by the prime) as a guide to **sub-lexical semantic processing**.

Sources: [1]Amenta & Crepaldi, 2012; [2]Emmorey, 1989; [3]Goodwin-Davies & Embick, 2019; [4]Medeiros & Duñabeitia, 2016; [5]Beyersmann, Casalis, Ziegler, Grainger, 2015; [6]Yap, Balota, Sibley, Ratcliff, 2012

Notes: This research is based on a subset from a larger priming study involving different suffixes in real words and nonwords.