Morpho-orthographic analysis does not depend on affix frequency

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BACKGROUND

Masked priming studies show equivalent priming for genuine complex words (e.g., dealer-DEAL) and pseudo-complex words (e.g., corner-CORN) [e.g., Rastle et al., 2004], but not for noncomplex words (e.g., twinkle-TWIN). The effect is supposedly triggered by the presence of an affix [e.g., Taft, 1979] and largely ignores semantics.

EXPERIMENTAL QUESTION: Does affix frequency influence decomposition during visual word identification?

DESIGN

Within-item within-subject design with 78 target words.

The primes were divided in three conditions:

- Morphologically complex (e.g., bas**esco**-BASE);
- High frequency orthographic (e.g., bas**erso**-BASE);
- Low frequency orthographic (e.g., bas**effa**-BASE).

METHODS

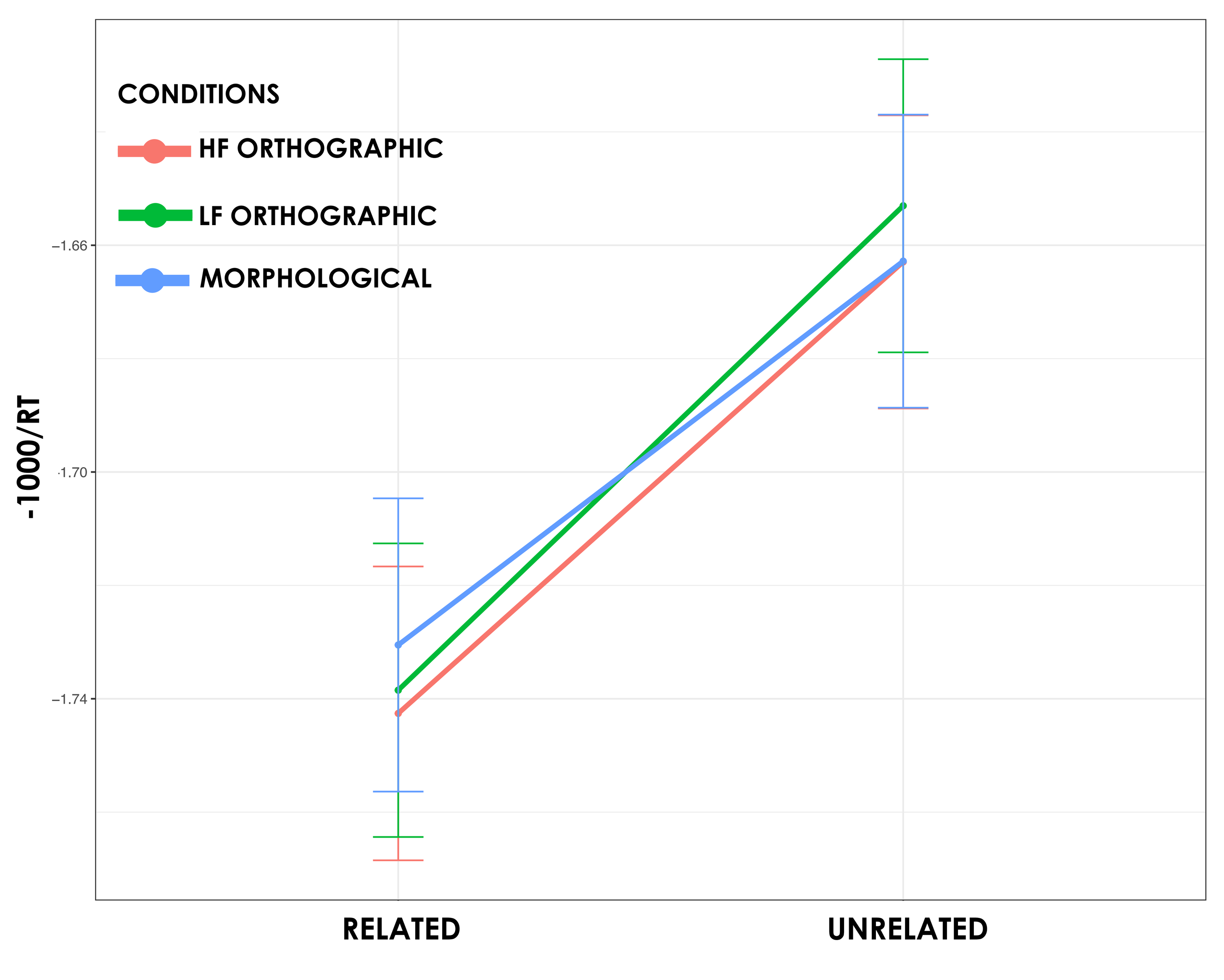
56 Italian native speakers tested in a masked priming lexical decision [Forster & Davis, 1984] - SOAs of 50ms.

Morphologically complex nonwords were also targets in two additional tasks, aimed at addressing their semantic interpretability:

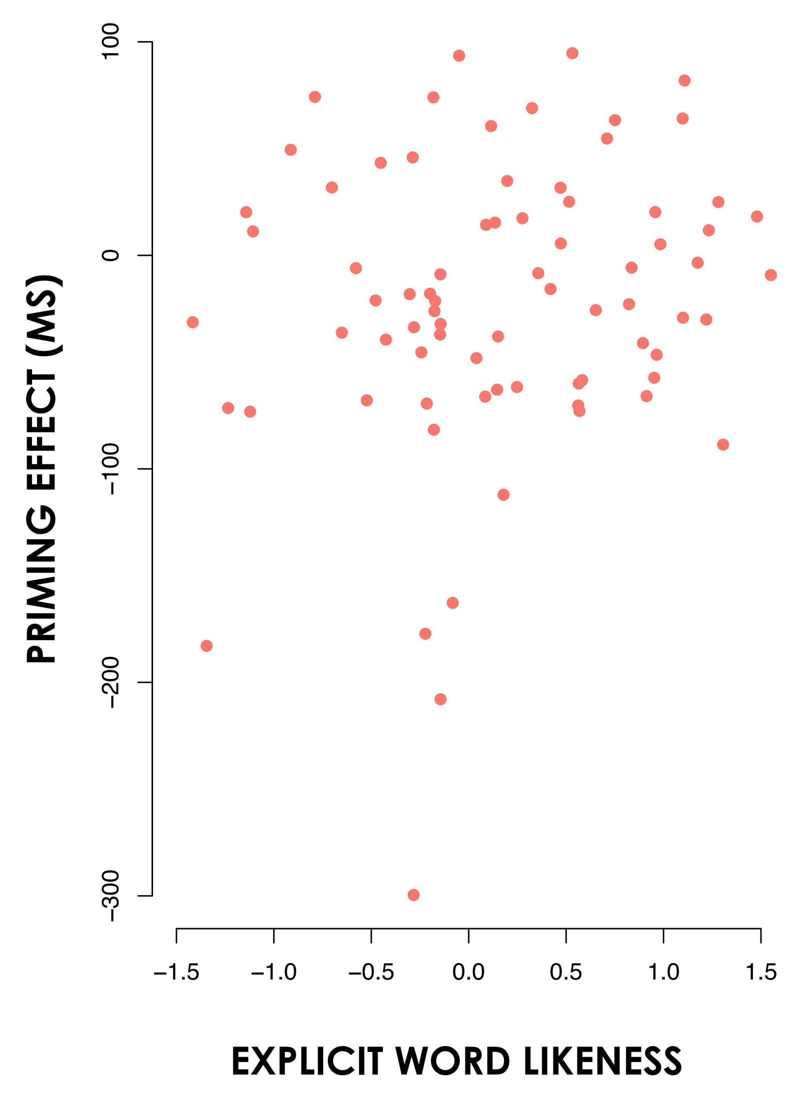
- Unprimed lexical decision (*implicit word likeness*);
- Rating (*explicit word likeness*).

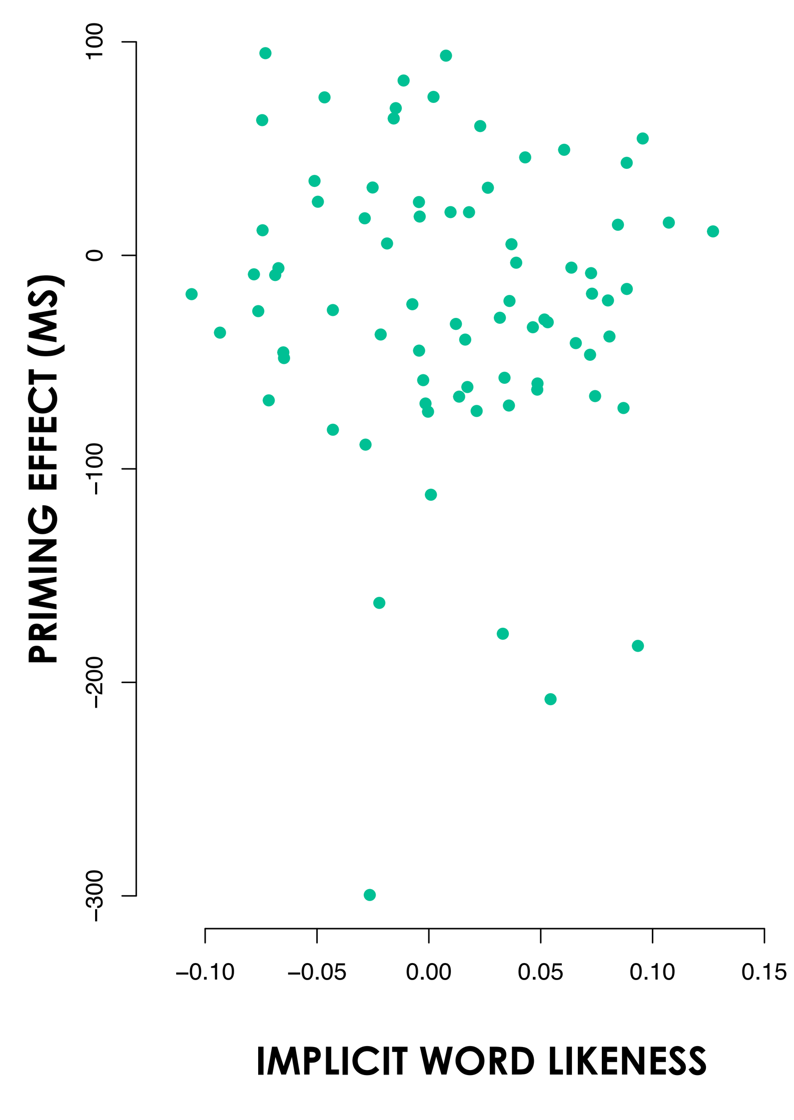
The analysis was conducted through linear mixed-effects models [Baayen, Davidson & Bates, 2008].

RESULTS



Strong priming effect (F(1, 3953.2)= 88.240, p<0.001), but no significant interaction with condition (F(2, 3953.6)= 0.075, p=0.92).





No strong correlation between priming effect and explicit (*r*=0.18, p=0.10) or implicit indexes (*r*=-0.09, p=0.43) of semantic interpretability.

CONCLUSIONS

Nonwords can successfully elicit priming effects, regardless of their morphological status and of cluster frequency; such conclusion suggests that segmentation depends on the extraction of edge-aligned stems [Grainger & Beyersmann, 2017].

Semantic information (i.e., interpretability) doesn't seem to play a role in early visual word identification.

PDF

REFERENCES: **Baayen, R. H.**, Davidson, D. J., & Bates, D. M. (2008). Mixed-effects modeling with crossed random effects for subjects and items. *Journal of memory and language*, 59(4), 390-412. **Forster, K. I., & Davis, C.** (1984). Repetition priming and frequency attenuation in lexical access. *Journal of experimental psychology: Learning, Memory, and Cognition*, 10(4), 680. **Grainger, J., & Beyersmann, E.** (2017). Edge-aligned embedded word activation initiates morpho-orthographic segmentation. In *Psychology of Learning and Motivation* (Vol. 67, pp. 285-317). Academic Press. **Rastle, K.,** Davis, M. H., & New, B. (2004). The broth in my brother's brothel: Morphoorthographic segmentation in visual word recognition. *Psychonomic Bulletin & Review*, 11(6), 1090-1098. **Taft, M.** (1979). Recognition of affixed words and the word frequency effect. *Memory & Cognition*, 7(4), 263-272.

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