Suffix Activation Through Morphosyntactic Features

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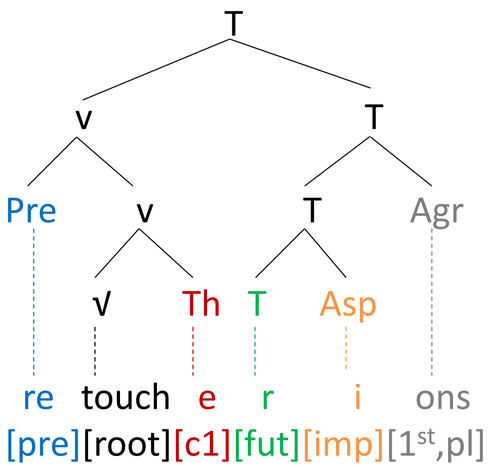
Introduction

Orthographic word recognition and production is mediated by morphological processing. Verbs are early decomposed in stem and suffixes for further morphosyntactic feature activation (Rastle & Davis, 2008).



Questions

Do French readers recognize isolated verbal inflectional affixes?

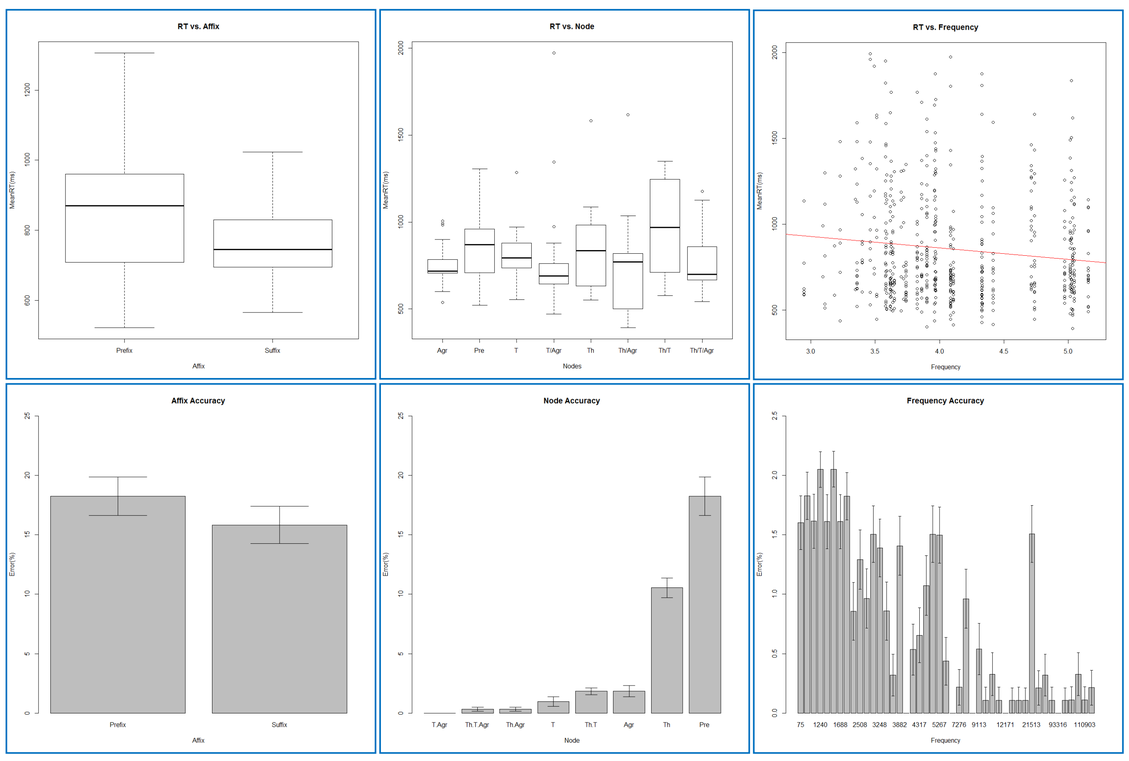
Which affixes are represented in the mental lexicon?

Can affixes trigger inflected verbal production? How?

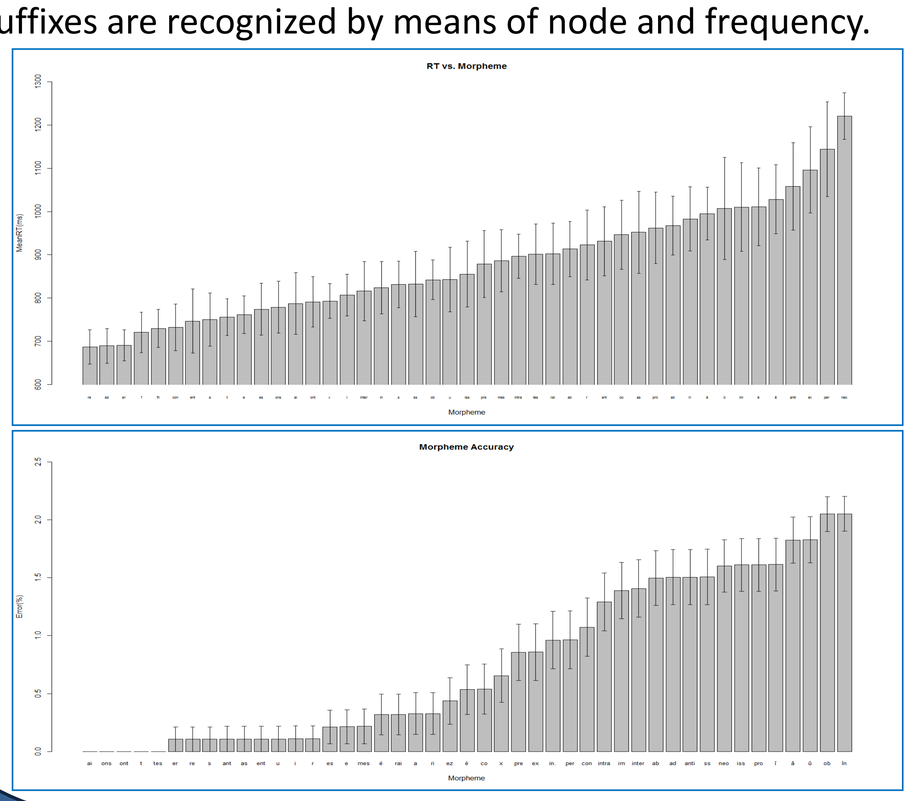
Online Experiment

Investigate the affix recognition throught feature and node activation, based on RT and accuracy.

Participants: 24 (12 males), mean age 21.66, right-hand, French as L1.
Procedure: Visual: lexical decision task on verbal affixes.
Stimuli: 15 preffixes, 30 suffixes, 90 pseudo-affixes.



- ✓ Suffixes are recognized faster and more accurately than prefixes.
- ✓ T and Agr nodes are recognized faster and more accurately than Pre and Th nodes.
- ✓ N-gram frequency modulates affix visual recognition.
- ✓ Suffixes are recognized by means of node and frequency.

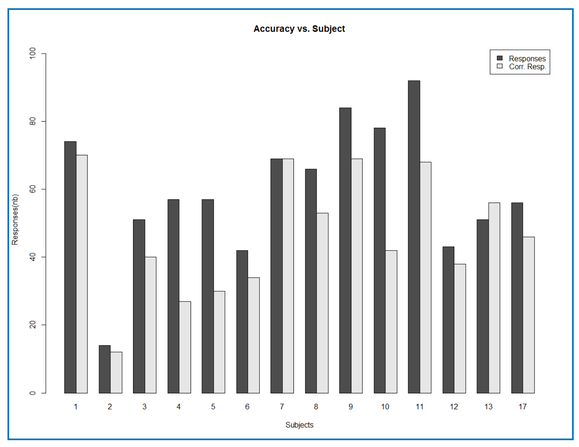


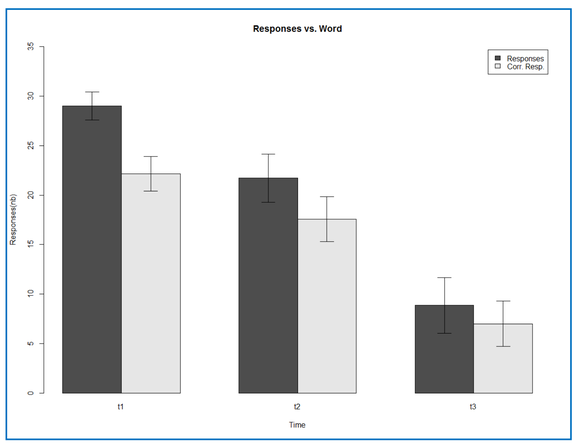
Offline Experiment

Investigate the write production of inflected verbal forms from suffixes through suffix frequency and node, based on production and accuracy.

Participants: 14 (5 males), mean age 22.29, French as L1.
Procedure: Write word production from suffixes. Three productions, fist close production. 20 minutes.
Stimuli: 34 suffixes with defined bounds.

Suffix	Word1	Word2	Word3
-ez	*mangez*	*prouvez*	*donnez*
-ai-	*allait*	*chargeai*	_____
-s	*joues*	*gardais*	_____





- ✓ Participants can activate and produce inflected verbs from suffixes.
- ✓ There is a large general individual variance between subjects.
- ✓ Responses get more accurately through experiment.
- ✓ Accuracy: Th suffix -; Agr ++, followed by T + suffixes.

Discussion

All French verbs are decomposed in stem and suffixes (Meunier & Marslen Wilson, 2004). Our results in both experiments correlated, showing that some specific suffixes, as [ai], [ons], [ent], are easily recognized and used in word production, while other, as [i], [x], [tes], are hardly recognized as verbal suffixes.

Answers

- Suffixes are recognized in function of frequency.
- Agr plural and T suffixes.
- Through features and word activation.

New Questions

How affixes interact with stem allomorphy?

How nodes and features are hierarchized in the lexicon?

Suffix	Th	T	Nb	Pe
-e(-)	1			
-i(-)	2	Imp	Pl	½
-ai(-)		Imp	Sg	1
-r(-)		Inf		
-ant		Pp		
-mes		Perf	Pl	1
-tes		Perf	Pl	2
-s			Sg	2/1
-t			Sg	3
-a			Sg	3
-ons			Pl	1
-ez			Pl	2
-ent			Pl	3

Conclusion

Overall, our results suggest a full-decomposition model (Marantz, 2013) where all French verbal inflectional suffixes are activated through morphosyntactic features in function of morpheme frequency and entropy (Estivalet & Meunier, 2015).

References

Estivalet, G. L., & Meunier, F. E. (2015). *Frontiers in Human Neuroscience*, *9*.
Meunier, F., & Marslen-Wilson, W.D. (2004). *Language and Cognitive Processes, 19*(4), 561-580.
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