# The linguistic foundations of verbal working memory: further evidence from syntactic knowledge effects

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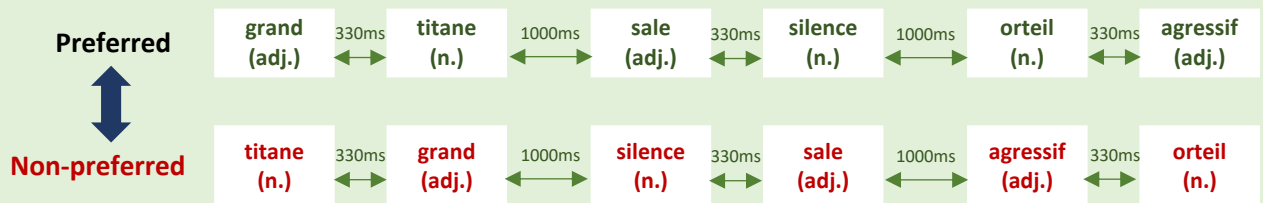✉ **hong.xiao@uliege.be**

## INTRODUCTION

Previous studies have highlighted interactions between verbal WM and language knowledge, particularly at phonological and lexico-semantic levels, and regarding recall of item rather than serial order information in WM.
The influence of syntactic knowledge on verbal WM has been investigated to a much lesser extent but could be theoretically informative, as syntactic knowledge is, by definition, sequential knowledge that should also impact the maintenance of serial order information in WM.
**This study examines the impact of adjective-noun positional syntactic knowledge on verbal WM.**

## EXPERIMENT 1

**Participants:** 93 native French speakers
**Immediate serial recall task:** 32 trials of 6-word lists containing 3 adjective-noun or noun-adjective pairs in mixed order, with half of the pairings being in the preferred syntactic order for a given pair. In French, an adjective can be placed both before or after a noun, with the actual order depending on specific adjective characteristics.
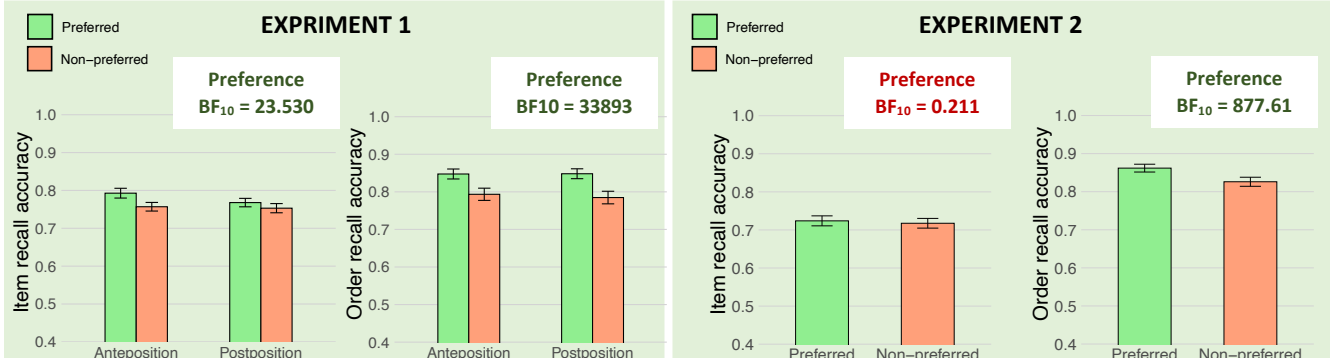
**Preferred**

| grand (adj.) | 330ms ↔ | titane (n.) | 1000ms ↔ | sale (adj.) | 330ms ↔ | silence (n.) | 1000ms ↔ | orteil (n.) | 330ms ↔ | agressif (adj.) |

**Non-preferred**

| titane (n.) | 330ms ↔ | grand (adj.) | 1000ms ↔ | silence (n.) | 330ms ↔ | sale (adj.) | 1000ms ↔ | agressif (adj.) | 330ms ↔ | orteil (n.) |

## EXPERIMENT 2

**Participants:** 84 native French speakers
**Immediate serial recall task:** 32 trials of 6-word lists containing 3 adjective-noun or noun-adjective pairs, by mixing both type of position (anteposition/postposition) and syntactic preference of position in the same list.

**List**

| soda (n.) | 330ms ↔ | naïf (adj.) | 1000ms ↔ | entier (adj.) | 330ms ↔ | progrès (n.) | 1000ms ↔ | thé (n.) | 330ms ↔ | content (adj.) |

## RESULTS



EXPRIMENT 1 — Preferred / Non-preferred

Preference BF[10] = 23.530

Preference BF10 = 33893

EXPERIMENT 2 — Preferred / Non-preferred

Preference BF[10] = 0.211

Preference BF[10] = 877.61

**...mpact of syntactic regula... ...verbal WM.**
...the role of syntactic kno... ...and more generally, highlight the
...WM on language knowledge...

...23). Sequential syntactic knowledge s... ...ng memory. *Memory & Cognition*, 1-25.
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...M. (2009). Syntax and Serial Recall: How La... ...y Journal of Experimental Psychology, 62(7), 1285-1293.