



# How do articulatory rehearsal and attentional refreshing interact with phonological similarity in the complex span paradigm?

Gérôme Mora, Valérie Camos, Klaus Oberauer

## ► To cite this version:

Gérôme Mora, Valérie Camos, Klaus Oberauer. How do articulatory rehearsal and attentional refreshing interact with phonological similarity in the complex span paradigm?. The Fourth European Working Memory Workshop (EWOMS 4), Sep 2008, Bristol, United Kingdom. hal-01880846

HAL Id: hal-01880846

<https://hal-univ-bourgogne.archives-ouvertes.fr/hal-01880846>

Submitted on 25 Sep 2018

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

# How do articulatory rehearsal and attentional refreshing interact with phonological similarity in the complex span paradigm?

Mora G.<sup>1</sup>, Camos V.<sup>1,2</sup>, & Oberauer K.<sup>3</sup>  
 1 Université de Bourgogne, 2 Institut Universitaire de France, 3 University of Bristol

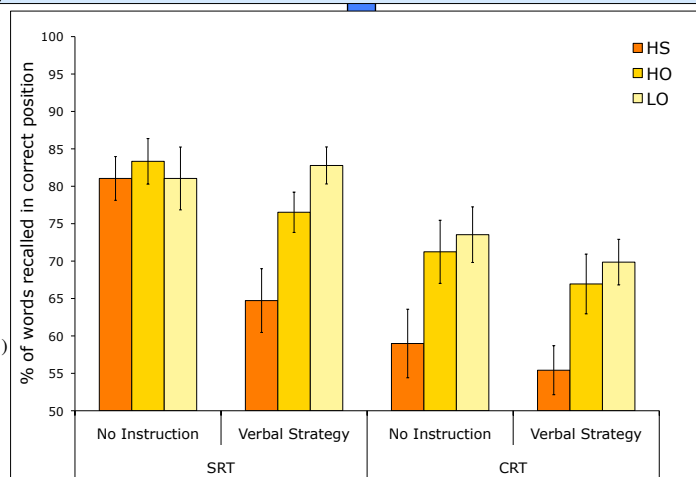
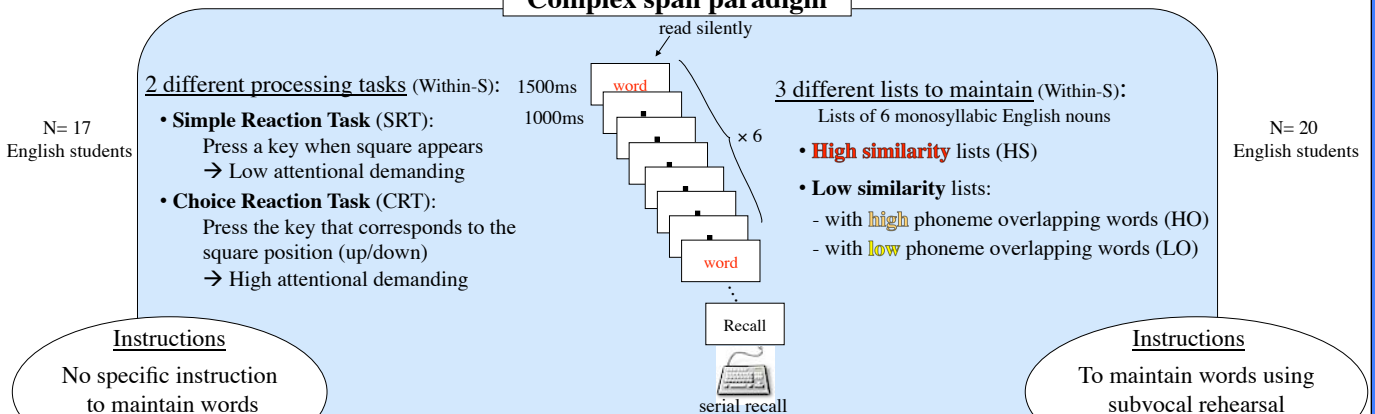
## Different accounts of decay and maintenance of verbal information in working memory

	<b>Phonological Loop</b> (Baddeley, 1986)	<b>Time-Based Resource-Sharing model</b> (Barrouillet et al, 2004)	<b>Interference model</b> (Oberauer & Kliegl, 2006)
	<ul style="list-style-type: none"> <li>time related decay</li> <li>articulatory rehearsal</li> </ul>	<ul style="list-style-type: none"> <li>time related decay</li> <li>attentional refreshing</li> </ul>	<ul style="list-style-type: none"> <li>feature overwriting</li> </ul>
	How to account for phonological similarity effect: Articulatory Rehearsal or Feature Overwriting? How to account for maintenance: Articulatory Rehearsal or Attentional Refreshing?		
	Aim of the study is to explore the impact of attention demand on phonological similarity effect		
Phonological similarity	Effect	???	Effect
Feature overlap	No effect	???	Effect
Attention load	No effect	Effect	No effect

### Exp 1

### Exp 2

## Complex span paradigm



**Results:**  
**Task effect** ( $p < .001$ ):  
 SRT > CRT  
**Similarity effect** ( $p < .05$ ):  
 HS < HO = LO  
**Interaction Task x Similarity** ( $p = .05$ )  
 In SRT → No similarity effect  
 In CRT → Similarity effect ( $p < .01$ )

**Results:**  
**Task effect** ( $p < .001$ ):  
 SRT > CRT  
**Similarity effect** ( $p < .001$ ):  
 HS < HO < LO  
 HO < LO only for SRT  
**No interaction Task x Similarity**  
 ( $p = .73$ )

**SRT**  
 - Marginal effect of Instruction ( $p < .07$ )  
 - Interaction Instruction x Similarity ( $p < .01$ )

**CRT**  
 - No effect of Instruction ( $p < .38$ )  
 - No interaction Instruction x Similarity ( $p = .99$ )

## Conclusion

- Effect of similarity as predicted by phonological loop model and interference model
- Effect of feature overlapping only with rehearsal instruction and low attentional demanding processing task → feature overwriting involves when both articulatory rehearsal and attentional refreshing are used simultaneously?
- Effect of attentional load as predicted by TBRS

## Strategy used for maintenance

	No articulatory constraint	Articulatory constraint
SRT low attentional demand	Attentional Refreshing	Articulatory Rehearsal (+ attentional refreshing?)
CRT high attentional demand	Articulatory Rehearsal	Articulatory Rehearsal