



# Interrupt me!

## Why forced interruptions are better than voluntary interruptions

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### Introduction

Self-interruptions happen as often as external interruptions in everyday life:

1. we decide to switch tasks
2. we interrupt our primary task
3. we switch to the secondary task



Pupillometry was used to investigate the switching process in self-interruptions and external interruptions



### Method

Primary task:  
Memory Game

	MATCHED!	MATCHED!	MATCHED!
		$5 \cdot X + 8 = 28$	
	MATCHED!		

Two cards match if their equations have the same X value

Three switches to the interrupting task during a memory game

Interrupting task:  
2-back

	MATCHED!	MATCHED!	MATCHED!
	MATCHED!	K	

Decide if the current letter is the same as 2 letters before



### Variations

1. Voluntary : participant chooses when to switch (self-interruption)  
Forced: external interruption while solving an equation (Exp 1)  
external interruption while clicking on a card (Exp 2)

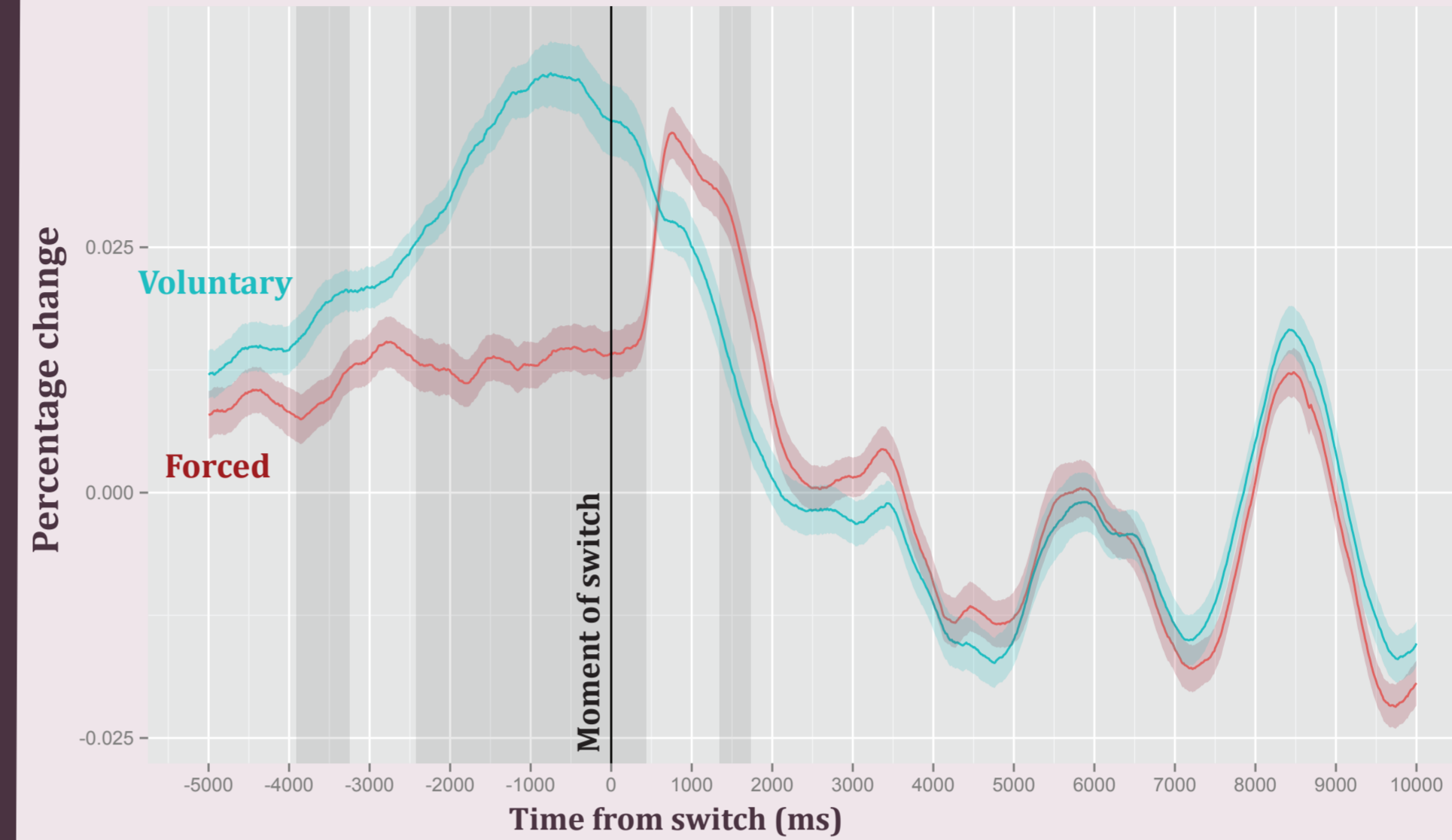
2. NoDelay: 2-back starts immediately after the switch  
Delay: 2-back starts 3 seconds after the switch



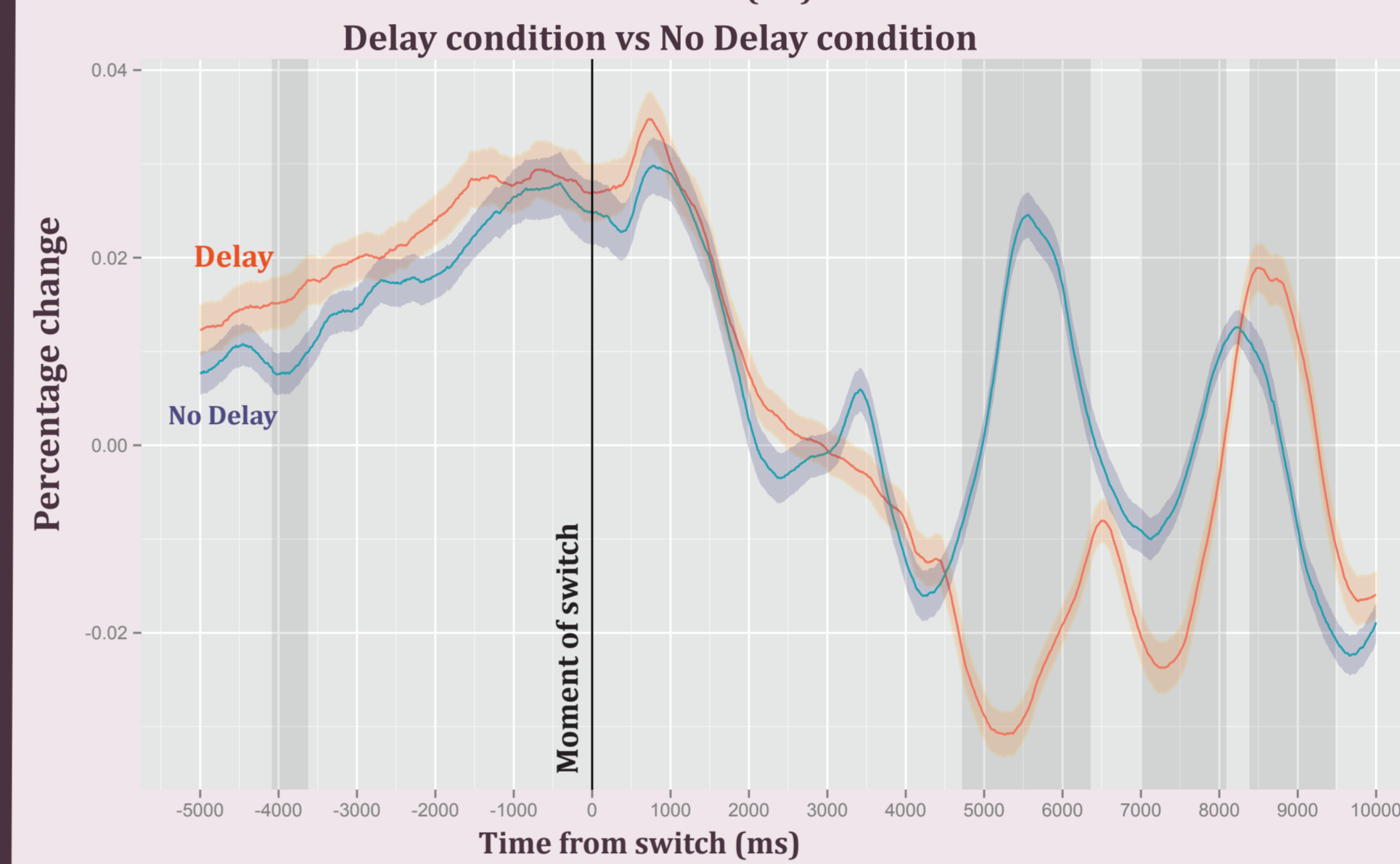
### Results

#### Experiment 1

Forced condition vs Voluntary condition



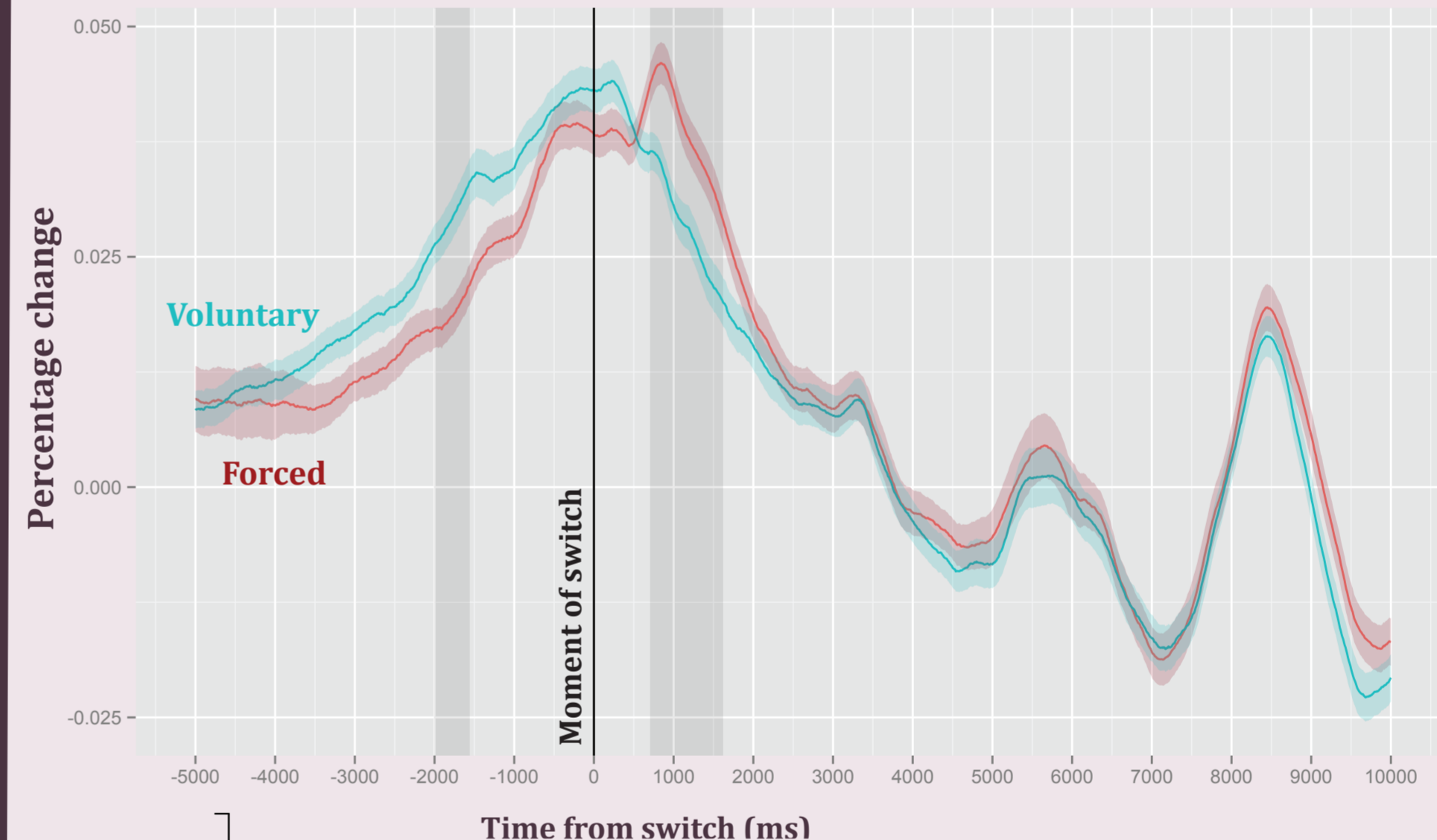
**Voluntary vs Forced:**  
Significant difference in pupil dilation increase



**Delay vs NoDelay:**  
No significant difference in pupil dilation increase

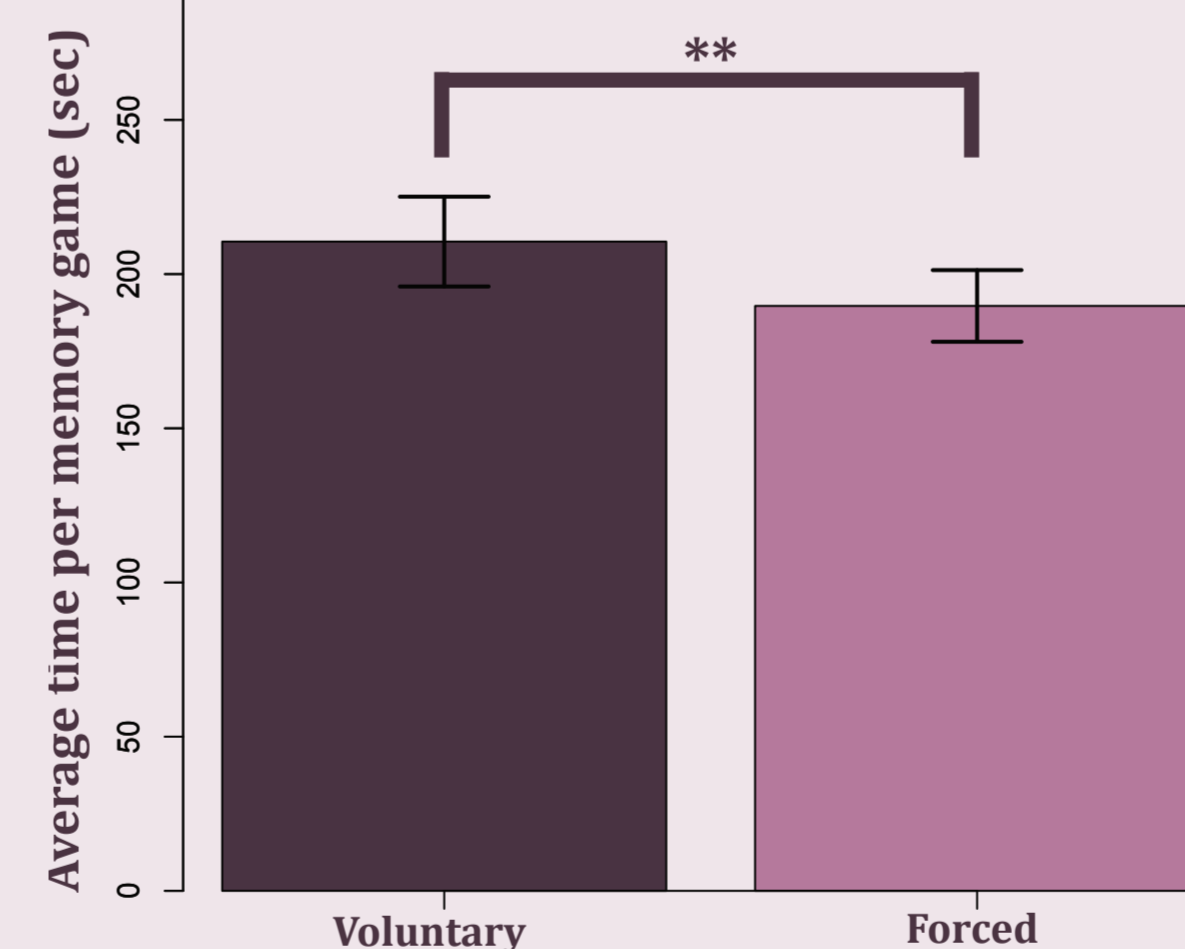
#### Experiment 2

Forced condition vs Voluntary condition



**Voluntary vs Forced:**  
Significant difference in pupil dilation increase

**Delay vs NoDelay:**  
No significant difference in pupil dilation increase



Average time per memory game  
Voluntary - Forced



### Conclusions

Pupil dilation increased before the interruption more in the Voluntary condition:

- Decision to switch reflected in pupil
- Decision to switch starts a couple of seconds before the interruption

Faster in the Forced condition:  
- Decision to switch has time costs



**Better to be interrupted than decide when to self-interrupt!**



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