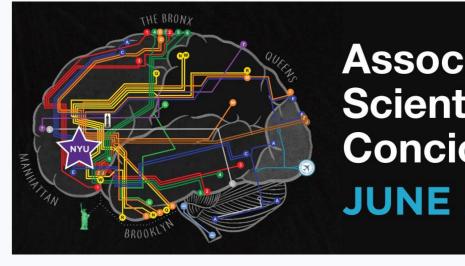


UNIVERSIDAD

DE GRANADA



Attention and Consciousness Research Group



Association for the Scientific Study of Conciousness JUNE 22-25, 2023

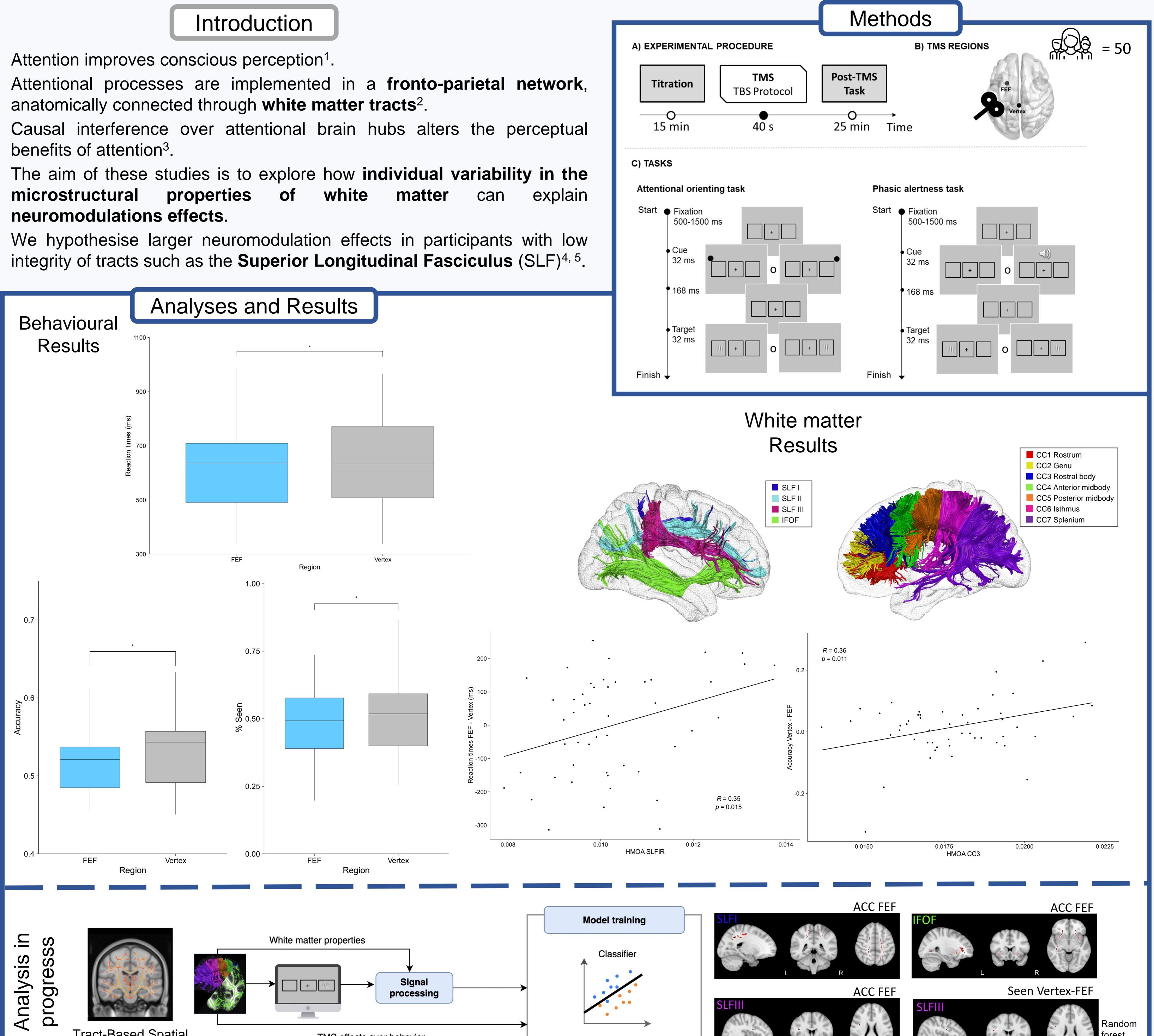
Boosting conscious perception through attention and neuromodulation

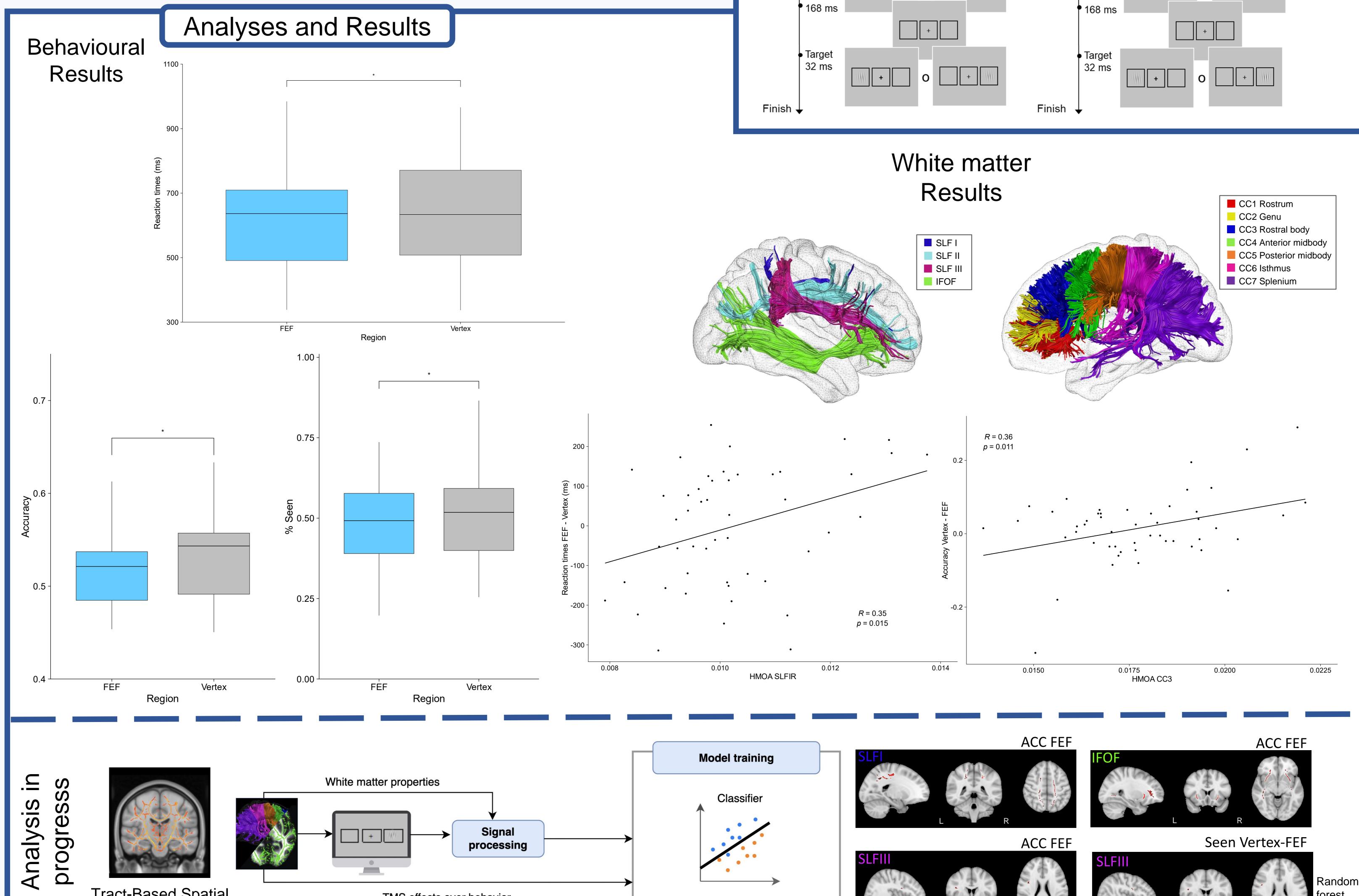
Rodríguez-San Esteban, P., Martín-Signes, M., Narganes-Pineda, C., Caracuel, A., Mata, J.L., Martín-Arévalo, E., & Chica, A.B.

Mind, Brain, and Behavior Research Center (CIMCYC-UGR), University of Granada, Granada, Spain.

Introduction

- ulletanatomically connected through white matter tracts².
- ulletbenefits of attention³.
- The aim of these studies is to explore how individual variability in the





Αđ	Tract-Based Spatial Statistics	TMS effects over behavior	Responders vs Non responders			Random forest classifier ACC=0.68
• FEF-	TMS impaired conscious dete	ection and accuracy, confirming the role of t	his pre-frontal region in conscious	perception ³ .	Conclusions	
• Indiv	Individual variability in the microstructural characteristics of the dorsal branch of the right SLF significantly correlates with RT neuromodulation effects as predicted: participants					
with	decreased HMOA had larger	RT interference after FEF-TMS stimulation	(compared to vertex).			
 Cont 	rary to our predictions, increa	ased HMOA in the body of the corpus call	losum was associated with larger	neuromodulation effects in accuracy	. This result might be explained	d
by in	ter-hemispheric inhibition.					
• A ma	A machine learning classifier trained on data extracted from the ventral branch of the SLF was able to differentiate between TMS responders and non-responders.					
• Thes	e results will add valuable ev	idence to the rising literature exploring indiv	vidual differences in neuromodu	lation in the healthy brain.		
Sergent, C., Wyart, V	/Babo-Rebelo, M., Cohen, L., Naccache, L	& Tallon-Baudry, C. (2013). Cueing attention after the stimulus is	s done can retrospectively tridder conscious percepti	on. Current biology, 23(2), 150–		Ter 2

[1] 155. [2] Thiebaut de Schotten, M., Dell'Acqua, F., Forkel, S. J., Simmons, A., Vergani, F., Murphy, D. G., & Catani, M. (2011). A lateralized brain network for visuospatial attention. *Nature neuroscience, 14*(10), 1245–1246. [3] Chica, A. B., Valero-Cabré, A., Paz-Alonso, P. M., & Bartolomeo, P. (2014). Causal contributions of the left frontal eye field to conscious perception. Cerebral cortex, 24(3), 745–753. [4] Martín-Signes M, Pérez-Serrano C, Chica AB. Causal Contributions of the SMA to Alertness and Consciousness Interactions. Cereb Cortex. 2019;29:648–56. [5] Martín-Signes, M., Cano-Melle, C., & Chica, A. B. (2021). Fronto-parietal networks underlie the interaction between executive control and conscious perception: Evidence from TMS and DWI. Cortex, 134, 1–15.

