Enhanced Disengagement of Auditory Attention and Phonological Skills in Action Video Gamers

Martina Mancarella[1,2,3*], Alexia Antzaka[2], Sara Bertoni[2,3,4], Andrea Facoetti[3] & Marie Lallier[2]

Email: martina.mancarella@kuleuven.be

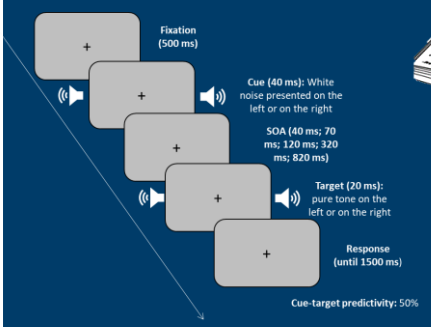
INTRODUCTION

Video games play a major role in the everyday life of children, teenagers, and adults. Several studies show that action video games (AVGs) improve visual attentional efficiency (Bavelier & Green, 2019). AVGs also appear to improve reading speed (Antzaka et al., 2017) and could serve as complementary training to improve reading fluency and phonological skills in children with developmental dyslexia (Franceschini et al., 2015, 2017). These results have been linked to the intrinsic characteristics of AVGs, in which fast disengagement of multisensory attention allows for efficient extraction of relevant dynamic information (Oei & Patterson, 2013), a skill that is crucially also involved in phonological and reading skills (Bertoni et al., 2019)

METHOD

25 AVG Players (2 females); mean age = 24.32

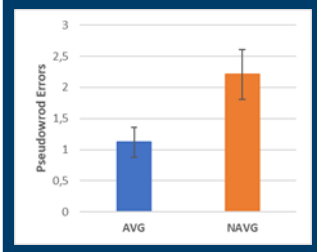
23 NAVG Players (2 females); mean age = 28.26



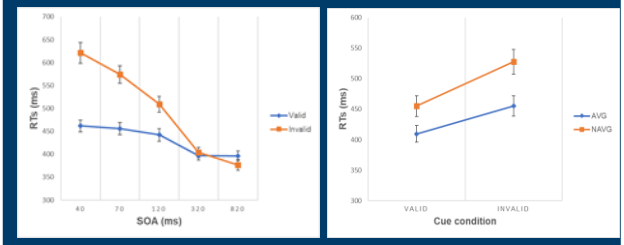
[1]Parenting and Special Education Research Group, Katholieke Universiteit Leuven, 3000 Leuven, Belgium
[2]Basque Center on Cognition, Brain and Language, San Sebastián, Spain, 20009
[3]Developmental and Cognitive Neuroscience Lab, Department of General Psychology, University of Padua, Padova, 35131
[4]Department of Human and Social Sciences, University of Bergamo, Bergamo, Italy, 24129

RESULTS

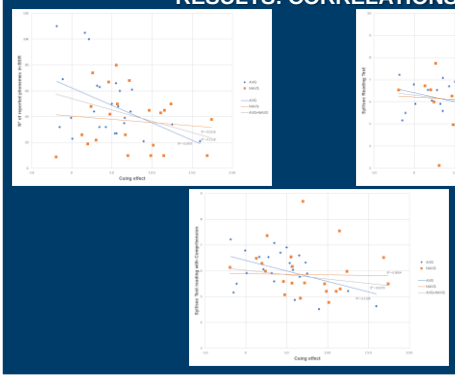
RESULTS: PHONOLOGICAL DECODING AND WORKING MEMORY



RESULTS: AUDITORY ATTENTION



RESULTS: CORRELATIONS



CONCLUSIONS

Overall, the present study provides evidence that playing AVGs is related to better auditory attentional disengagement, more accurate phonological working memory, and phonological decoding performance. Our results challenge the claim that visual attention is the principal component mediating the link between AVG training and reading improvements. Indeed, our results strongly suggest that AVG training might lead to amodal attentional improvements that can be observed in both visual and auditory domains. We suggest that more efficient attentional disengagement - controlled by the posterior parietal cortex - induces enhanced multi-sensory processing in AVG players. Future research should aim to investigate this question using similar attentional paradigms in both modalities within the same groups of participants.