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A Piloting Study on Visuospatial Attention in Parkinson's Disease

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Parkinson's disease [PD] is characterized by disorders of visuospatial dysfunction, negatively impacting everyday functioning. Visuospatial difficulties seem to be more prominent in those whose motor symptoms begin on the left body side [LPD] than the right body side [RPD]. The aim of the case report is to assess these potential contributors through performance on a visuospatial line bisection task.

Participants included 2 PD patients with motor symptoms asymmetry [LPD, RPD] and 10 normal controls. Visuospatial attention was assessed using a line bisection task, in which participants were asked to mark the middle of 40 horizontal lines. Twenty lines were bisected using the right hand and twenty lines using the left hand.

Results show that all participants produced a leftward bisection bias that was greater in the left than in the right hand condition. Both the PD patients produced a significant greater leftward deviation than controls when the task is performed with the right hand, and with the left hand for the LPD when he/she performed the task with the left hand. Conversely, the RPD patient produced a significant greater rightward deviation than controls when he/she performed the task with the left hand.

These data are congruent with research in humans supporting the idea that dopamine plays an important role in spatial orienting. Pseudoneglect is viewed as reflecting right hemisphere specialization for processing spatial information, resulting in orienting toward the contralateral hemispace. Our results suggest that visuospatial function in PD could reflect asymmetric dopamine neurotransmission in LPD/RPD.

Biography:

Francesco Terrenzio has obtained his Bachelor's degree in Psychology at the University of Chieti-Pescara and is currently studying for a Master's degree in Cognitive Neuroscience at the University of Turin. His research is focused on neurodegenerative diseases, with a strong interest in the Parkinson's disease. During his internship at the Molinette Neurology department, he is performing a research to explore visuospatial impairment in Parkinson's patients.