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The mechanics of the frontal aslant tract

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The frontal aslant tract (FAT) has been a focus neurological research for the last decade. A recent review concentrated on its role in speech language and executive function and highlighted the research gap concerning the Mechanics of the FAT. The ongoing research concerns the mechanics of tongue movement: specifically, lateral tongue movements. Our tongue actually is constantly moving and only slows down to speak. Controlling lateral tongue position involves coordination of inputs from our limbs and our ocular system. As limb, eye and tongue movements all involve homologous brain regions to stop undesired behavior, we must choose between competing actions. Within this system, the eye predicts behavior. A case study encountered as part of my research concerned a 22-year-old with a persistent developmental stutter – since age 6. It was clearly observable that the words on which she predicted a difficulty were accompanied by unusual eye movements and gestures. For the tongue to assume a neutral position I instructed my client to say the words she foresaw difficulty while looking down to her naval. This immediately enabled clear speech and the procedure was replicated with a 6-year-old. Consequently, this highlights the need for more research into tongue movement and the mechanistic functioning of the frontal aslant tract.

Biography

Hilary McDonagh is a Psychology Teacher at Sligo College of Further Education. She received Bachelor's Degree in Hons Psychology from UCD and is a Graduate Member of the Psychological Society of Ireland. She is currently researching on how unconscious tongue positions can be modified to improve posture and functionality.

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