

# Second language

There is considerable individual variability in second [language](#) (L2) learning abilities in [adulthood](#). The [inferior parietal lobule](#), important in L2 learning success, is anatomically connected to [language areas](#) in the [frontal lobe](#) via the [superior longitudinal fasciculus](#) (SLF). The second and third branches of the SLF (SLF II and III) have not been examined separately in the context of language, yet they are known to have dissociable frontoparietal connections. Studying these pathways and their functional contributions to L2 learning is thus of great interest. Using diffusion MRI tractography, Sander et al. investigated individuals undergoing language training to explore brain structural predictors of L2 learning success. They dissected SLF II and III using gold-standard anatomical definitions and related prelearning white matter integrity to language improvements corresponding with hypothesized tract functions. SLF II properties predicted improvement in lexical retrieval, while SLF III properties predicted improvement in articulation rate. Finer grained separation of these pathways enables better understanding of their distinct roles in language, which is essential for studying how anatomical connectivity relates to L2 learning abilities <sup>1)</sup>.

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<sup>1)</sup>

Sander K, Barbeau EB, Chai X, Kousaie S, Petrides M, Baum S, Klein D. Frontoparietal Anatomical Connectivity Predicts Second Language Learning Success. *Cereb Cortex.* 2021 Oct 5:bhab367. doi: 10.1093/cercor/bhab367. Epub ahead of print. PMID: 34607363.

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