

The Influence of Tonal Language Organization and/or Processing on the Lateralization of Praxis

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Abstract:

This study examines the potential impact of tonal language exposure and processing on the lateralisation of praxis. While functional lateralisation is often attributed to innate traits and handedness, recent research (Króliczak et al., 2021) suggests that praxis and language are linked in most individuals, irrespective of handedness. This investigation explores whether this organisation is biologically determined or influenced by environmental factors such as tonal language use. A pilot study found that Mandarin speakers exhibited more symmetrical language processing compared to the typical left-hemisphere dominance observed in European participants, suggesting that tonal languages may uniquely shape the neural mechanisms underlying praxis. This research builds on these findings by employing Visual Half-Field (VHF) and Dichotic Listening (DL) paradigms to assess praxis and language lateralisation in tonal and non-tonal language speakers, addressing previous study limitations. The findings aim to enhance our understanding of how language type influences cognitive and motor functions, shedding light on the dynamics of lateralisation.