Parkinson's Disease

LANGUAGE IN PARKINSON'S DISEASE: A NEGLECTED TRANSLATIONAL AVENUE

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Unlike motor speech disturbances, linguistic disruptions have long been underestimated in Parkinson's disease (PD) research. However, accruing research attests to their ubiquity and usefulness to characterize and identify patients with diverse disease phenotypes. Here I will present multiple findings from our team covering phonological, morphosyntactic, and lexico-semantic dimensions in early-stage patients. Our approach integrates classical language tests, experimental psycholinguistic tasks, and automated discourse analysis, alongside neuroanatomical (MRI), hemodynamics (fMRI), and electrophysiological (EEG) methods. With these tools, we have revealed systematic disturbances in phonemic discriminability, morphological processing, complex-sentence parsing, and action-verb comprehension. Some such deficits are selective (not generalized across their overarching domain), partially specific (absent in non-motor disorders), primary (not secondary to overall cognitive dysfunction), associated to critical neurobiological abnormalities (significantly correlated with disease-specific anatomo-functional patterns), and traceable in prodromal stages. Notably, new automated approaches for capturing these patterns in spontaneous discoursed allow identifying individual patients with up to 90% accuracy. Together, these findings underscore the basic and translational relevance of linguistic examinations in PD. In particular, considering the impact of communication difficulties in patient functionality and their potential as disease markers, systematic language assessments could enhance screening, phenotyping, diagnostic, and monitoring procedures in clinical settings. This line of work opens promising avenues at the interface of language science, cognitive neuroscience, and behavioral neurology.