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Motor-related word association differences in Parkinson Disease for verb processing

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Abstract

Sensory-related word association differences in Parkinson's Disease for verb processing

Free word association tasks are tools to study spontaneous lexical organization in children and adults. Lexical organization resembles a network of words grounded on relevant sensory information; for example, verbs engage the most with motor information. Studying lexical networks in populations with motor disorders, like Parkinson's Disease (PD), will insight into the effect of relevant information deprivation in lexical organization.

We applied a free word association task with early-acquisition Spanish nouns as stimuli. Participants consisted of 20 with PD -divided into two groups depending on their cognitive state- and ten healthy older adults for control. Then, we used an artificial neural network to determine the semantic distance between stimuli-response dyads.

We found differentiated semantic distances for verb responses in all groups in an inverse u-shaped curve depending on their cognitive and PD state. Our findings suggest that lexical organization and meaning are not crystallized, but adapt from sensory information.