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Deconstructing agrammatism in primary progressive aphasia

Miguel Angel Santos-Santos, Sonia Marques-Kiderle, Marco Calabria, Francesco Ciongolo, Clara Martin, Ignacio Illan-Gala, Alberto Lleo, Simona Mancini

State of the art: Diagnosis of the presence and absence of agrammatism, a heterogeneous constellation of morphosyntactic deficits in production and comprehension, is necessary for classification of primary progressive aphasia (PPA) into one of three variants -semantic (svPPA), logopenic (lvPPA) and nonfluent (nfvPPA). We investigated the pattern of agrammatic impairment in PPA using a grammaticality judgment (**GJ**, comprehension) and syntax production (**SP**) task.

Methodology: GJ: participants were visually and aurally presented with 48 sentences (50% incorrect) on a computer and were instructed to evaluate the acceptability of each stimulus. Unacceptable sentences contained different types of morphosyntactic anomalies (e.g., agreement, word order, and verb-argument structure). **SP:** participants were presented with line drawings depicting characters performing an action and were instructed to construct (orally or with anagrams) one of 3 types of sentences: active, passive, or containing a prepositional phrase. The task included a simple condition consisting of 9 sentences with one subject and verb and a complex condition consisting of 9 compound sentences.

Results (N;Median[IQ])**: GJ:** lvPPA(14; 0.750[0.7-0.9]) and svPPA(5; 0.81[0.7-0.8]), but not nfvPPA(10; 0.87[0.7-0.9]), were less accurate than controls(18; 0.94[0.9-0.96]). **SP-simple:** No difference between patients (lvPPA: 13; 9[8-9]; svPPA:8[6-9]; nfvPPA: 9; 7[7-9]) and controls (5; 9[9-9]) survived multiple comparisons however nfvPPA scored the lowest. **SP-complex:** lvPPA (5[2-8]) and nfvPPA (6[4-6]), but not svPPA (7[5-8]), performed worse than controls (9[9-9]).

Conclusion: PPA variants can show differential patterns of impairment across various subcomponents of agrammatism suggesting they should be considered for diagnostic classification.

Conflicts of interest

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