# Study 2. Parts of Speech

- Agrammatism is an acquired deficit of morphosyntactic production.
- The challenge is to quantify Part of Speech (POS) production in connected speech.
- We built an NLP tool that automatically labels connected speech and provides the POS for each word produced.

#### AJSLP

### Research Article

## Part of Speech Production in Patients With Primary Progressive Aphasia: An Analysis Based on Natural Language Processing

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Background: Primary programine agricults (PPA) is a non-vollagementative disorder inherenterized by a programine decline of language functions. Its symptoms are proposed into three PPA vollations: mortisant PPA, lapapoint PPA, and semaptic PPA. Commission deficience offer depending and semaptic PPA.

Allies. This study aims to determine the differences between PPA variants with request in a pair of speech PDG production and its identity morphologopal markets that classify PPA, variants variant scaling studyine learning. By fulfilling these aims, the overarching past is to prevaile algorithm measures that can facilitize charact diagnosis, execution, and opposes.

Mathed and Presentance Connected speech productions than PPA pattern produced in a porture deception task ware transcribed, and the PDG class of each word was extinuted using relating studying processing, charactery, PCG.

lagging. We then implemented a handled analysis: (6) linear regression to determine his qualiteris with nonlinear PTA, semantic PTA, and lagginers; and nonlinear pTA, semantic PTA, and lagginers; and a sequential observables of the PTO growth of the PTO growth of the PTO growth of the PTO growth of the PTO using machine to expensive diseased (a.e., readout house), depending machine to a machine to provide the ptop of the PTO using machine to a machine to provide the ptop of the PTO using machine to the provide disease of the ptop of the PTO using the ptop of the p

orphosymanic deficits have been identified as one of the law suspicana of primary program department of the Mondam et al., 2014, 2012; Mendam & Weintmach. 2014), a neurodopmerative condition that results in a considerable determination of speech and language diffe (Thompson, Lukin, et al., 2012). Thompson

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Editor Dirk B. Den Dulin Reserved Suptember 14, 2019

Residue Inspiration 14, 2019 Revision marked February 14, 2020 Assepted May 13, 2020

https://doi.org/10.1046/2020\_02/02/27/19-00014

Publisher Note: This article is part of the Special Insue Select Papers. From the 49th Clinical Aphanology Conference. & Mark, 2014). PPA is characterized by substantial variability of symptoms as an effort of the degree of neuroscaperactive decline, underlying pathology, and areas of brain demage (Mesulam, 2011; Thompson, Lukic, et al., 2012). Thompson & Mach, 2010; To understand the symptoms, society parallelized communicativities density patential into these mans PPA variance (PPA dearly patential variance). PPA variance (PPA) in the hypothesis (PPA) and the semantic (PPA variance) (PPA).

Memphasystenic production is tay for integrage communication, and as it becomes impaired in FFA, it can provide objective teachers for the dissollations of potents with FFA into variants. For clinical readulation, prospecies of the conditions, and interveniess. Parisms with a VFFA are characterized by sparsity of function would acid actional system due to peak amongle, at the posterior individe foreid gyras (Broach's area, Germen Strapsas et al., 2011.). Thompson of al., 2017. 2011. Thompson, Cho. et al., 2012.)

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## **Analyzing Morphosyntax**

52 patients with PPA: 19 with nfvPPA, 18 with lvPPA and 15 with svPPA.

**content words:** proportion of *nouns, verbs, adjectives, and adverbs.* **function words**: proportion of

- conjunctions, e.g., and, or, and but,
- prepositions, e.g., in, and of,
- determiners, predeterminers, e.g., the, a/an, both,
- pronouns such as he/she/it and wh- pronouns, such as what, who, whom,
- modal verbs, e.g., can, should, will,
- possessive ending ('s),
- adverbial particles, e.g., about, off, up, infinitival to, as in to do.

ratio of nouns and verbs with other POS: e.g., Noun / Verb ratio, Noun / Adjective ratio, Verb / Pronoun ratio, and Verb / Preposition ratio.

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#### Research Article

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Charakontos Thereistoclesus, \* © Kimberly Webster, \* Alexandros Affilinos, \* and Kyrana Tsapkini\*\*

Statisgound, Primary progressive agricults (PPA) is a neurodepresente disorder characterised by a progressive statistics of progress fundament. In operations are grouped into these PPA visitance northwest PPA, logocome, PPA, and secrecial PPA. Commodial disolated as offer deporting on the PPA statust. All the progressive for differences between Allers PIAs statistics.

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tagging. We then represented a hooked autoput to be investigated on a determine how protects with continue? TPA, some settle PPA, and languages PPA, which has been been provided that forms to be a provided to the final house on PPA. And a continue of the in the PPA and a continue on PPA. And a continue continue to the provided of an exchange of PPA. Settle continue to the provided of an exchange of PPA. Settle continue that provided of an exchange of PPA and continue to the settle continue to the settle continue to relate to reflect to the provided of the continue of the settle continue to the settle continue to

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Received Suptember 16, 2019 Sociales sectived February 14, 2006 Assepted May 10, 2000

https://doi.org/10.10440300\_ATVLP-1946614

Publisher Note: This article is part of the Special Issue Select Papers From the 49th Clinical Aphanishing: Conference. A Mich. 2005, PPA is characterized by substantial variability, at specimen on or first of the degree of sound eigenvalues (as either of the degree of sound eigenvalues (as either the property of the continue of the continu

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