Linguistic features of discourse in episodic and semantic memory retrieval

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Introduction

Semantic variant primary progressive aphasia (svPPA) is a neurodegenerative condition in which semantic memory (general knowledge) is known to be impaired (1). Amnestic mild cognitive impairment (aMCI) is a condition in which episodic memory (memory for events at a specific time and place) is known to be primarily affected (2).

Objectives
- To compare discourse and memory patterns in these groups of patients with healthy matched controls.
- To investigate if linguistic deficits manifest differently in different categories of memory impairment

Hypotheses
- Both patient groups would show linguistic impairment;
- Language deficits would be more prominent in the svPPA group when semantic information was produced; and in aMCI when episodic information was produced.

	svPPA	Controls svPPA	aMCI	Controls aMCI
Age	66.8 (9.3)	69.16 (9.0)	77 (5.1)	74.17 (6.6)
Years of education	16.8 (5.0)	15.88 (3.4)	14.94 (0.0)	13.70 (3.6)
Sex	F=6, M=12	F=8, M=10	F=12, M=5	F=8, M=9
MMSE	20.8 (8.2)	29.0 (0.9)	27.2 (11.4)	28.2 (1.7)
Handed-ness	L=1	L=1	L=0	L=2

Note. aMCI data originally published in (2).

Methods

| Participants	Task	Coding
18 svPPA patients and 18 controls 17 aMCI patients and 17 controls	Participants reported one autobiographical narrative about their early adulthood	Narrative was transcribed, segmented into details; Details were categorized as episodic or semantic and analysed using the Quantitative Production Analysis (QPA; 5); Quantity of words, nouns, verbs, closed-class words, morphological inflection, and well-formed sentences were examined in each memory set

References
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Results and Discussion
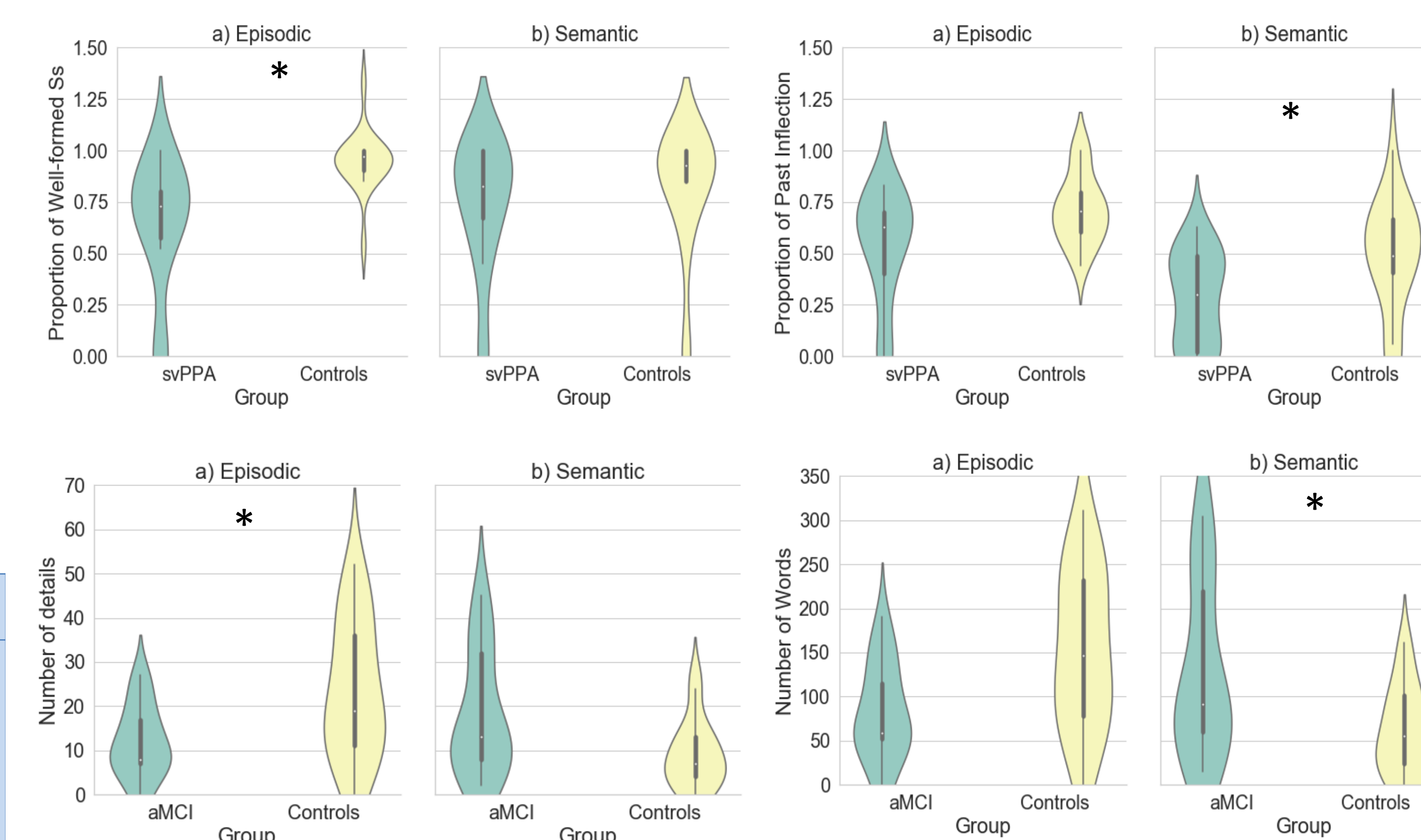
- Reduced linguistic features of discourse were found in both clinical groups;
- In the set of episodic details, the svPPA group produced fewer well-formed sentences; the aMCI group produced fewer utterances;
- In the sets of semantic details, the svPPA group produced fewer past tense inflections, and the aMCI group produced more words in comparison to healthy controls;
- The only reduced linguistic feature in aMCI was linked to the retrieval of episodic information; whereas episodic retrieval seems to impact linguistic production in svPPA due to specific demands related to the type of message conveyed, or to high cognitive demand of memory retrieval and narration process.
- Previous findings from our group relate to the current findings. We propose that deficits in retrieval of episodic memory lead to reduced amount of information, but deficits in retrieval of semantic memory lead to difficulties in search and retrieval of coherent information.(6).

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