

SEVERELY IMPAIRED AUTOBIOGRAPHICAL MEMORY AND MACRO-LINGUISTIC ASPECTS OF LANGUAGE IN FRONTO-TEMPORAL DEMENTIA: A CASE STUDY

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Introduction

- Frontotemporal dementia (FTD) is a neurodegenerative condition which leads to disorders related to behaviour and/or language impairment (Pijnenburg, 2011).
- Diagnostic criteria for behavioral variant FTD (bvFTD) excludes patients with severe amnesia, however 10% of confirmed cases have reported memory symptoms and severe amnesia has been described (Hornberger et al., 2010). Autobiographical memory has been shown to be impaired (Irish et al., 2010).
- Language deficits have been observed in bvFTD (Kertesz et al., 2007; Harciarek & Cosentino, 2015) in spite of diagnostic criteria suggesting language should be mostly spared. Discourse impairment has been linked to deficits in executive resources which hampered discourse production (Ash et al., 2006).

Methods

Hypothesis:

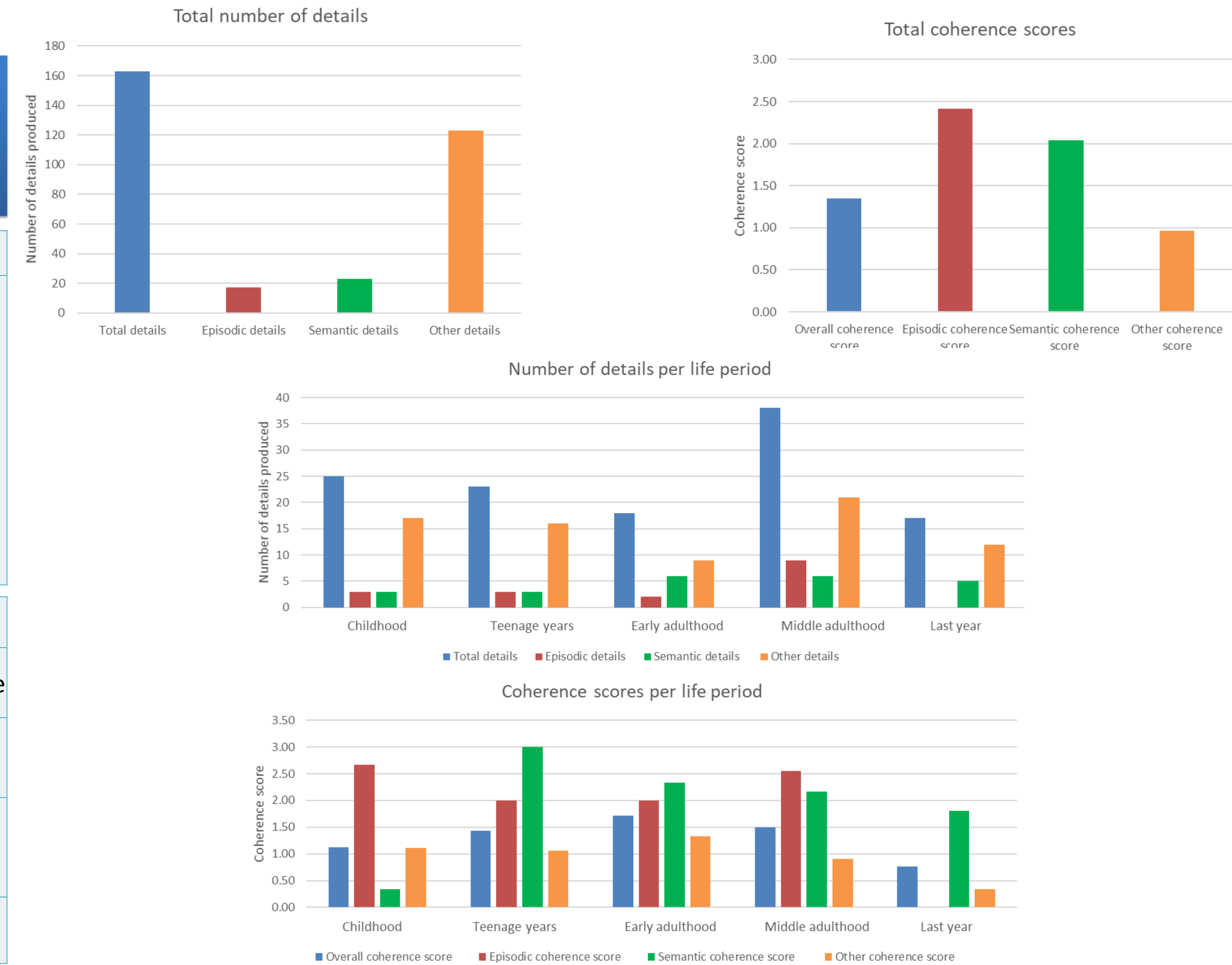
- a) Coherence scores will reflect utterances unrelated to the topic and devoid of meaning b) Patient will show difficulty retrieving autobiographical memory information

Participant	Task	Coding
FM 62 year-old female with 16 years of education diagnosed with bvFTD	FM answered questions about personal past events in five life periods through the Autobiographical Interview (AI) (Levine et al., 2002) in the presence of a relative. The answers generated extended stretches of discourse.	1- Answers were transcribed and segmented into utterances (details); 2- The content of the details was analysed using a scale we developed to measure coherence; 3 – Scores were tallied and divided by total number of details (Rogalski et al., 2010); 4- The utterances were categorized as episodic memory, semantic memory, or “other” details (fillers, repetitions etc.) (Levine, 2002)

Coherence scores	"Who was the best man at your wedding?"
3 detail is an element of the semantic frame	"um the best man would have been a friend of mine
2 detail is a relevant implication of the frame	"who I went to university with back in 1958 to 1964" "um who now lives in Vancouver"
1 detail is neither an element of the frame nor relevant to the topic	"actually lives up not in Vancouver but in... " "um where's where's the Olympics going to be this Winter?" "um that's where he lives"
0 detail is devoid of semantic content	"yeah"

Results

- AI analysis: . In previous studies, (Levine et al., 2002) the Episodic-to-Total ratio of details in healthy older adults during the AI was shown to be an average of 39%. However, FM produced a total of 121 details, out of which 14% were episodic, while 19% were semantic details. Most details produced by FM (77%) were “other” details, which hindered the informativeness of her speech.
- Coherence: Overall, FM coherence score was below 50%, having received a score of 1.35 out of 3.
- Coherence per type of detail: FM received a coherence score of 2.41 for the composite of episodic details, a score of 2.04 for the composite of semantic details, and a score of 0.96 for “other” details. These scores would indicate that most of the episodic and semantic details provided by the participant were relevant. However, FM’s relative reported that her narrative was riddled with confabulations. Some semantic information provided by FM was consistent (e.g. information about having attended specific events or trips), however most episodic information was untrue.



Discussion

The results suggest that:

- FM’s autobiographical recall and discourse production were severely impaired
- Her discourse production was mostly composed of fillers, repeated information and rhetorical questions, filling in the linguistic gaps.
- Her autobiographical recall was replete with confabulations filling in the memory gaps.

These results could indicate that an executive function component may be working to sustain FM’s autobiographical recall and discourse production, in spite of the severe impairment of these cognitive functions.

Future steps

Future studies should investigate a larger sample size and compare the results from bvFTD patients to healthy matched controls. Additionally, a comparison should be done between discourse produced through memory recall and picture description in order to investigate the effects of memory demands on discourse production in bvFTD.

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