Autobiographical memory in aphasia: An exploratory study

Background: Autobiographical memory (AM) stores factual knowledge of one's past and specific personal events (Bahk & Choi, 2017), and is important to a person's identity. AM in aphasia has received scant attention, possibly because it is difficult to differentiate language and memory. For example, if a speaker with aphasia is telling a personal story which lacks information and detail, it can be unclear if the speaker is having difficulty with storing or accessing that information, or if the speaker has accessed the information, but cannot encode it in language. Possible presenting difficulties with AM therefore could overlap with the symptoms of aphasia. Furthermore, people with aphasia may be more susceptible to developing dementia than the general population (Mijajlović et al., 2017). For accurate diagnosis and treatment, there is therefore a need to study AM in aphasia, despite its challenges. To our knowledge, this is the first systematic investigation of AM in aphasia, using the Autobiographical Memory Interview- AMI (Kopelman et al., 1990), a well-known neuropsychological test of AM.

Aims: we aimed to explore
1) how people with aphasia (PWA) performed on the AMI, compared to neuro-typical people;
2) how PWA scores on the AMI were affected by communication supports;
3) how the construct of AM relates to working memory and language in aphasia.

Methods & Procedures: Participants were 59 neuro-typical people and 17 people with mild to moderate aphasia based on classifications from the Western Aphasia Battery (Kertesz, 2007), none of whom had concerns about their memory. Demographic variables were similar in both groups, with no significant differences for age, gender, years of education, and non-verbal inferential ability (Raven, 2004). Participants were assessed on working memory (WM) (forward, backward digit span), visual WM (forward, backward colour span), and the AMI (Kopelman et al., 1990), a standardised semi-structured interview that assesses recall of personal semantic and personal episodic memory for specific periods in a person's life (childhood, early adult life, recent facts). Participants with aphasia completed the AMI twice, two weeks apart: *Unsupported*, as described in the test manual; and *supported*, using language facilitation and total communication methods (e.g., maps, letter grids, number lines, internet searches). Aim 1 was explored using one-way ANOVAs; Aim 2 using paired t-tests; and Aim 3 using Pearson's correlations.

Outcomes & Results
PWA scores varied within the *unsupported* condition (*semantic* range = 38-55; *episodic* range= 12-26) and supported condition (*semantic* range = 41-56; *episodic* range = 16-26). Controls outperformed PWA in both sections of the AMI (*semantic* F (1, 74) = 302.116, p = .00; and *episodic* F (1, 74) = 25.220, p = .00), and in all subsections. The role of language support in semantic and episodic scores of the AMI was significant [*semantic*, t (16) = 3.887, p = .00; *episodic* t (16) = 4.808, p = .00]. Post-hoc comparison between the PWA language-supported scores and the NHP data did not eliminate the between-group difference. There was no strong relationship between WM and AM in PWA, using correlational analysis. In PWA, there was a moderate relationship between the two AM subcomponents (r = -.55).

Conclusions
The difference between PWA and controls for AMI scores is unsurprising, given the linguistic demands of the AMI but PWA did not perform in line with control speakers, even once language support was provided. This may suggest that speakers with aphasia have difficulty with AM; or may suggest that novel tests are required, to differentiate between difficulties with language and AM in speakers with aphasia. Such novel tests may minimise linguistic demands and be based on further work modelling the construct of AM in aphasia, which appears to differ to AM in neurologically healthy speakers.

Select References

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