

Proportion Cultural Themes

vmPFC

MTL

Controls

Sticking to the Script: How Life Script Knowledge Deficits Impact Autobiographical





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1. Rotman Research Institute 2. University of Toronto 3. Toronto Rehabilitation Institute **Predictions** Introduction Methods 1) Cultural & Personal Script Task3 2) Cue-Word Task Life scripts are types of schemas that¹: Task 1 "...think of an experience "...key typical events "...typical age at 1. Provide probable patterns of events across the lifespan MTL → Scripts will be intact across the lifespan?" time of event?" from your own life which **Cultural Life** 2. Shape encoding & retrieval of autobiographical memory (AM) you are reminded of vmPFC → Scripts will include most typical Age Event Script Task when presented with a vmPFC & MTL patients show AM deficits, but differ in coupled with idiosyncratic content First Steps 1 vears old word..." schematic script abilities²: e.g., ANGRY Task 2 vmPFC patients → schema-impaired MTL → Will use more script attributes to Task 1/Task 2 Scoring: ...key personal events?" ..your age at time Used norms from Berntsen & of event?" MTL patients → intact schema function, impaired episodic **Personal Life** support poor AM Rubin, 2004 to examine Script Task Event Age How does vmPFC & MTL damage differentially contribute to presence & typicality of vmPFC → Will use fewer, but most typical First Child 30 years cultural script themes the relationship between scripts & AM? scripts attributes Results 1a) Cultural Life Script TASK 1 MTL vmPFC TASK 2 MTL vmPFC Controls Controls Proportion Cultural Themes N = 6 6 N = 3 18 22 4 Mean age 53.25 68.83 62.67 Mean age 49.5 50.9 52.17 (SD) (9.47)(8.31)(15.04)(SD) (13.44)(8.28)(12.83)14.75 15.17 Mean years 16.5 14.81 14.13 16.5 Mean vears edu (SD) (0.71)(1.99)(2.83)edu (SD) (2.06)(1.72)(2.88)**Conclusions** vmPFC Controls vmPFC MTL Controls How does vmPFC & MTL damage differentially contribute to the relationship 1b) Personal life script Proportion = # themes/total events

Typicality = how often theme was reported

Average Typicality

between scripts & AM?

The vmPFC & MTL differentially contribute to the expression of script knowledge, and how it is leveraged in AM. When scripts are impaired, they are not effectively used to support AM, and access may be limited to the most typical script attributes. On the other hand, when AM is impaired, script knowledge may be relied upon more to compensate for episodic decline.

- · For scripts, differences were marginal between vmPFC & MTL patients and controls for proportion of cultural script themes & typicality (figures 1a & 1b)
 - When generating AMs, MTL patients included the highest # of cultural script themes. suggesting they required more schematic script support (figure 2)
- MTL patients & controls used a variety of script themes, vmPFC patients did not; suggests that when they used scripts to support AM, they only accessed the most typical themes

MTL vmPFC MTL Controls vmPFC Controls 2) Cue-word Proportion Cultural Theme $\rho = 0.87, p = 0.33$ Average Typicality

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References

1, Bower, Black, & Turner, 1979; 2, McCormick et al., 2018; 3 Rasmussen & Berntsen, 2004