## Neurocircuitry of episodic memory as revealed by neurodegenerative disorders

**S0024 session**
Wednesday, 20 July 2016 | 12:00 - 14:15 | Room 4
**Chair/Organizer: Muireann Irish**
**Discussant: Michael Kopelman**

**A-0181 Marked hippocampal atrophy without major episodic memory deficits: the paradox of semantic dementia**
Renaud La Joie, Alexandre Bejanin, Serge Belliard, Vincent de la Sayette, Francis Eustache, Béatrice Desgranges, Gaël Chételat
Unité Inserm-EPHE-Université de Caen Normandie- CHU de Caen, u1077
Hippocampal atrophy is classically associated with episodic memory deficits. However, patients with semantic dementia (SD, a clinical syndrome associated with frontotemporal lobar degeneration) harbor marked hippocampal volume loss, quantitatively comparable to that observed in Alzheimer's disease (AD), while showing an intriguing relative preservation of day-to-day episodic memory. This presentation will provide an overview of recent studies that further refine our understanding of this clinical-anatomical paradox by comparing brain alterations in patients with AD and SD. Overall, results suggest that episodic memory preservation in SD is likely related to the preservation of a posterior hippocampo-cortical network which includes the posterior cingulate and angular cortices, and which is strongly targeted by AD.

**A-0182 The relationship between episodic memory and spatial orientation in neurodegeneration**
Michael Hornberger, Maxime Bertoux
University of East Anglia, Norwich, United Kingdom
In the proposed talk, we will present episodic memory and spatial orientation data in Alzheimer's disease (AD) and frontotemporal dementia (FTD) patients. The data presented will demonstrate that AD and FTD patients can show similar levels of episodic memory dysfunction with equivalent hippocampal damage at presentation and with disease progression. By contrast, spatial orientation contingent upon retrosplenial/medial parietal cortex regions is exclusively impaired in AD, but not in FTD. These findings, across multiple experiments, suggest that specific spatial orientation processes are not dependent on the hippocampus, corroborating animal and functional neuroimaging studies. The findings further highlight a new avenue of using retrosplenial-specific deficits as potential biomarker and outcome measures for Alzheimer's disease pathology.

**A-0183 Disrupted interaction between memory and self in patients with Alzheimer's disease**
Sarah Genon [1,2], Eric Salmon [1], Fabienne Collette [1], Christine Bastin [1]
[1] Cyclotron Research Centre, Belgium; [2] Jülich Research Centre, Germany
In humans, self and memory processes interact as reflected by the self reference (SRE) and self reference recollection effects (SRRE). However, in patients with Alzheimer's disease (AD), this relationship can be significantly disrupted. Our work reveals impaired SRE and SRRE in AD for recognition of adjectives previously judged for self-relevance, as well as for recall of names of people previously linked to the self. For both materials, a qualitative impairment of the recollective experience for self-related items is also observed in AD. Neuroimaging studies suggest that reduced SRE is related to decreased grey matter volume in the lateral prefrontal cortex (lPFC). Thus, retrieval of recent self-related memories is impaired in relation to altered high-order frontally-mediated processes in AD.

**A-0184 Autobiographical memory or episodic memory highly related to the self: A double dissociation in neurodegenerative diseases.**
Pascale Piolino
INSERM S894, Center of Psychiatry and Neurosciences, University Sorbonne Paris Cité, Paris, France.
We propose to investigate the issue of remote episodic memories in neurodegenerative diseases by comparing patients with Alzheimer's disease and semantic dementia. Clinical, experimental, and neuroimaging data of autobiographical memory will demonstrate that the autobiographical memory impairment varies according to the nature of the memories under consideration and the locus of cerebral dysfunction. The data will also be discussed with the purpose of shedding light on the relationships between remote episodic memories and the self within these two neurodegenerative diseases.

**A-0185 Alterations in autobiographical memory in Posterior Cortical Atrophy**
Samrah Ahmed [1], Ian Baker [1], Sian Thompson [1], Masud Husain [2], Chris Butler [1]
[1] Nuffield Department of Clinical Neurosciences, University of Oxford, UK; [2] Department of Experimental Psychology, University of Oxford, UK.
Posterior cortical atrophy (PCA) represents a rare degenerative disorder characterised by atrophy to predominantly occipital regions of the brain, resulting in the progressive disruption of visual processing. To our knowledge, no study has explored the capacity for autobiographical memory retrieval in PCA and it remains unclear to what extent retrograde memory is altered in this syndrome. Here, we present preliminary findings from an ongoing study investigating autobiographical memory performance in PCA and Alzheimer's disease using the Autobiographical Interview. Despite relatively preserved MTLs, PCA patients display subtle alterations in the provision of contextual details. Our findings suggest that damage to posterior regions of the brain disrupts access to visual information integral to the ABM trace.

**A-0186 Neurocognitive mechanisms underlying future thinking – insights from the dementias**
Muireann Irish [1,2]
[1] University of New South Wales, Sydney, Australia; [2] Neuroscience Research Australia, Sydney, Australia.
Episodic memory dysfunction represents a hallmark clinical feature of many dementia syndromes. Mounting evidence, however, reveals striking deficits in the ability to envisage the future in dementia, providing key insights into the neurocognitive mechanisms supporting future thinking. Impaired capacity for prospection appears closely connected to episodic memory dysfunction in AD, attributable to predominantly posteromedial brain atrophy. In contrast, medial temporal and frontal lobe atrophy underpins future thinking alterations in frontotemporal dementia. Finally, the syndrome of semantic dementia has clarified the pivotal role of semantic memory for simulating the future. While deficits in prospection appear to be a ubiquitous feature of dementia, the underlying neurocognitive mechanisms mediating these impairments differ markedly contingent on the locus of pathology in each patient group.

**A-0187 Episodic future thinking in Parkinson's disease – the role of executive function**
Stefania de Vito [1], Nadia Gamboz [2], Maria A. Brandimonte [2], Paolo Barone [3], Marianna Amboni [3], Sergio Della Sala [4]