

Dementia

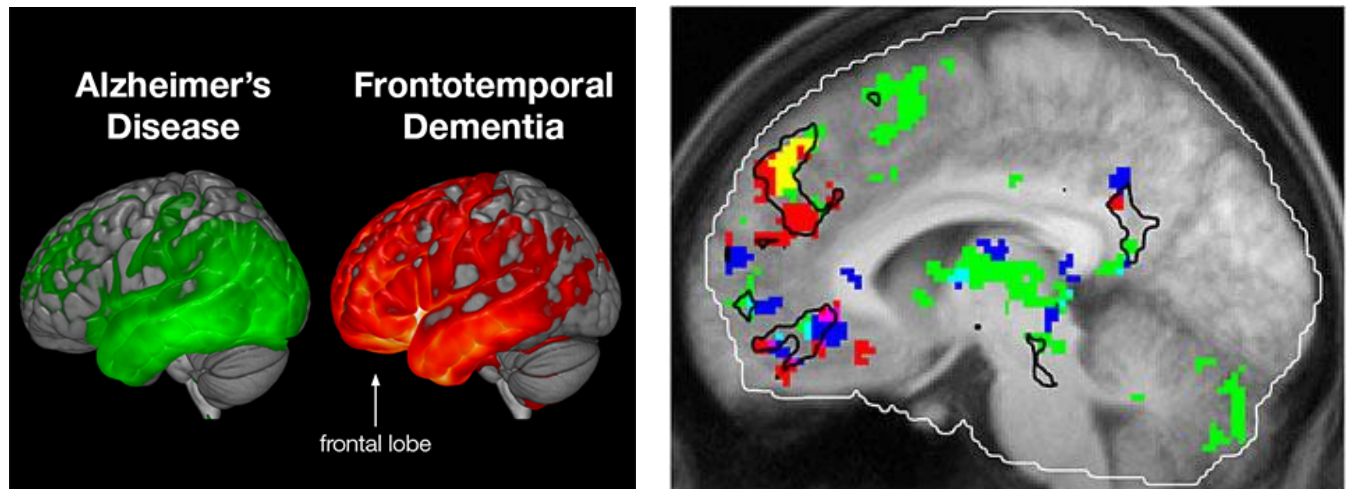
Neuropathology – memory areas affected

Frontotemporal dementia (formerly called Pick's Disease)

- Selective degeneration of the anterior frontotemporal cortex
- Coping skills are normal
- Posterior pathology is minimal
- Components of episodic and working memory are spared. In contrast semantic memory (which relies on the integrity of the left inferior temporal lobe), is devastated. Individuals have poor performance on word recall and naming.

Alzheimer's disease

- Early pathology involves the hippocampus, posterior parietal and medial temporal areas; leads to inability to acquire new memories and difficulty with recalling facts
- Short term memory is affected first, next affected is episodic memory, then semantic memory, and finally, procedural memory



A. An analysis of MRI data showing the pattern of brain tissue loss in Alzheimer's disease (green) and frontotemporal dementia (red).

Image from:

<http://medschool.ucsf.edu/features/examining-link-between-early-stage-dementia-and-criminal-behavior>

Original research: Patterns of brain atrophy in frontotemporal dementia and semantic memory

http://www.behavioralneuroscience.org/neurodegeneration_files/Rosen,%20Goldman%20-%202013%20-%20Unknown.pdf

B. This fMRI brain scan shows areas that respond to familiar music (green), salient memories (red), and music that is perceived as enjoyable (blue). The yellow area, in the **medial prefrontal cortex**, is a response both to music familiarity and salient memory. From: "The Neural Architecture of Music-Evoked Autobiographical Memories," by Petr Janata;

<http://cercor.oxfordjournals.org/content/early/2009/02/24/cercor.bhp008.full>

