**Objective** This experiment was conducted in order to distinguish between areas of the brain involved in memory concerning the self versus semantic knowledge. This distinction is well established within psychology but the investigations of the neural underpinnings are less clear.

**Methods** Twelve healthy subjects (four males and eight females; mean age 26½ years, range 21–36, 10 right-handed and 2 left-handed) were scanned during four conditions in a standard block design experiment with alternating 40-second on- and off-periods (Epochs). During the on periods 8 Danish adjectives describing personal valence (Semantic), or judge the self relatedness of the word (Self). During a fourth condition (Recognition) subjects were required to decide whether they had a clear memory of having seen the word before (Yes, remember), knew they had seen it before (Yes, know), having seen the word before (Yes, suppose), or if finally they were certain they had not seen the word before (No).

We focus on the results from the recognition condition which was not expected by the subjects. There was thus no intentional legging during the experiment, which was confirmed by the verbal reports given by the subjects. During the recognition condition three lists of words were shown that had been presented previously, one list from each of the above-mentioned conditions, as well as two lists of new words.

The scans were made on a GE Sigma 1.5 T scanner, (Gradient EP, TE=40 msec., TR=4.0 sec., 40 axial slices). Data were analyzed with SPM2, realigned and unwarped, normalized to Talairach space, and smoothed using an RFWHM of 7 mm. The data were analyzed using a standard Hrf with temporal derivatives (RFX, FWE p<0.001, p<0.025). Anatomical localizations were established using the MNI Space Utility (MSUL) and the Talairach Daemon.

**Results** The presented results are based on different parts of the same recognition task. The only difference in the task concerns the condition of the previous presentation of the words (vowel, semantic, or self).

**Discussion** Behavioural data shows that words related to oneself generated more episodic memories than the semantically judged words, but they did not seem to engage more of the left inferior parietal lobule (BA 40), which might be expected from previous findings. There was only a slight insignificantly difference in the reaction times between the words from the self and semantic conditions. Whereas new words and words from the vowel condition required significantly longer reaction times. The behavioural data suggests that even though all tasks led to differences in recognition, the cognitive demands and self tasks probably were too similar to cause clear-cut differences in the fMRI data. Words from the semantic and self encodings both created episodic memories and semantic knowledge about the word before.

Based on the behavioural data an analysis combining the semantic and the self conditions from the recognition condition was carried out. The main activation in this analysis was in BA 40 supporting that this area is involved in the episodic memories created by the semantic and self encoding conditions.

**Conclusions** In general, deactivations were more prominent than activations. The only activations found were in BA 44 and BA 40 during recognition of words presented during the vowel and semantic encoding conditions. Recognition of words related to the self did not activate any particular brain areas in the voxel corrected analysis. All three conditions showed deactivations in the cerebellum, either culex or dentate, but only the recognition of words presented during judgement of relatedness to the self deactivated areas in the prefrontal cortex. This could be caused by the ease of access to episodic memories which were predominant in performing this task. Further analysis is needed to investigate the differences and similarities between the neural underpinnings of semantic and the self-related memory. The numerous deactivations of the cerebellum also calls out for further investigation of the cerebellar involvement in memory tasks.

**References**
1. www.sph.sc.edu/crnm/
2. C.C. authors/Projects/alcohol/AlcoholDepend.html
3. NIH NIDA, Alcoholism Threat Brain Research 80 pp. 107-114

**Acknowledgements**
This research is supported by The Danish Research Council for the Humanities (the Rococo project).