conditions, condensed and spaced. **Results:** There was no significant difference in naming accuracy between PCA, typical AD or controls for letters presented in isolation. However, PCA patients were consistently worse than both tAD patients and controls in terms of both naming accuracy and latency for flanked letter stimuli. The accuracy of tAD patients was not significantly different from that of controls in any flanker condition (see Table 1). Consistent with observations of crowding in normal peripheral vision, PCA performance was primarily determined by spacing but not flanker type, with condensed flankers leading to reduced speed and accuracy. Another characteristic of crowding observed in PCA task performance was an ameliorating effect of reverse polarity flankers on flanked letter identification. Voxel-based-morphometry analysis of the occipital region found an association between crowding performance and grey matter volume in the right collateral sulcus (FWE corrected: \( p < .0001 \)).

**Conclusions:** These findings demonstrate a grave inhibitory effect in the spatial vision of PCA patients that is of qualitative similarity to crowding. Future investigations might reveal how emerging crowding effects relate to visual dysfunction and particularly reading impairment in PCA.

Figure 1. Statistical parametric maps of grey matter volume associated with a measure of crowding (crowding (shapes/numbers)). The statistical parametric maps are displayed on axial (A), coronal (B) and sagittal (C) sections of the mean normalized bias-corrected images in MNI space: the right hemisphere is shown on the right on coronal and axial sections. When restricting analysis to a pre-specified region of interest (see region below in blue), there was an association between a greater degree of crowding and lower grey matter volume in the collateral sulcus (FWE corrected: \( p < .05 \); peak location: \( x = 30 \); \( y = -58 \); \( z = -8 \)). Uncorrected t-values for this association are displayed below in a colourmap.

Table 1

| Groups       | Naming accuracy (%) |
|--------------|---------------------|
|              |                     |
| Task         | N / PCA tAD Controls |
|              |                     |
| 1. Unflanked letter identification | 2099.8 ± 0.2 100 ± 0 100 ± 0 |
| 2. Letter flankers | 2475.8 ± 25.1** 99.3 ± 1.6100 ± 0 |
| 3. Shape flankers | 2483.5 ± 18.6* 99.7 ± 1.0100 ± 0 |
| 4. Number flankers | 2483.6 ± 23.5* 99.7 ± 1.0100 ± 0 |
| 5. Same polarity letter flankers | 2478.8 ± 22.5* 98.5 ± 2.9100 ± 0 |
| 6. Reverse polarity letter flankers | 2486.5 ± 15.6* 99.3 ± 2.2100 ± 0 |
| Total condensed (Tasks 2-4) | 3672.0 ± 26.7** 99.7 ± 0.9100 ± 0 |
| Total spaced (Tasks 2-4) | 3690.0 ± 16.0* 99.5 ± 1.5100 ± 0 |

**Oral Sessions: O2-07: Neuropsychology: Neuropsychological Profiles of Dementia and Mild Cognitive Impairment**

**O2-07-04 COGNITIVE SUBTYPES IN DEMENTIA DUE TO ALZHEIMER’S DISEASE IDENTIFIED BY LATENT CLASS ANALYSIS**

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**Background:** Increasing evidence suggests substantial heterogeneity in cognitive phenotypes in Alzheimer’s disease (AD). We aimed to identify cognitive subtypes in AD dementia by performing latent class analysis (LCA) based on neuropsychological data. **Methods:** For LCA we used data of an extensive neuropsychological test battery of 938 patients with probable AD dementia. In general, patients were 69±9 (mean ± standard deviation) years old and MMSE was 21±3. We performed multinomial logistic regression analysis with cluster membership as dependent variable and dichotomized demographics, APOE genotype, CSF biomarkers, and MRI characteristics (medial temporal lobe atrophy [MTA], posterior cortical atrophy [PCA], global cortical atrophy [GCA], white matter hyperintensities [WMH] and presence of lacunes and microbleeds) as independent variables. **Results:** LCA revealed eight clusters, which were characterized by disease severity and impairment of specific cognitive domains.