

12<sup>th</sup> International Conference on

# Alzheimer's Disease & Dementia

October 29-31, 2018 | Valencia, Spain

## Ambiguous meaning boundary of words in Alzheimer's disease

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Although certain types of dementia such as progressive non fluent aphasia (PNFA), semantic dementia (SD), and logopenic progressive aphasia (LPA) involve language dysfunction, most Alzheimer's disease (AD) patients have no trouble in verbal communication. However, it is unclear whether they speak and perceive words in semantically the same manner as normal people. To examine word meaning for AD we performed picture word matching task (VC 14,15) in 18 patients with AD and 11 controls and similarity decision task (VC 16,17) in 40 patients with AD and 15 Controls. All tasks are subtests of SALA (a Japanese aphasia battery), which corresponds to PALPA in Europe. AD patients performed poorer than controls did in both tasks ( $p < .005$ ,  $p < .01$ , respectively). Moreover, more errors were found for verbs than for nouns ( $p < .05$ ,  $p < .001$ , respectively). However, the effect of similarity differed among the two tasks. In the picture-word matching task, more errors were observed for semantically similar pairs than for dissimilar ones ( $p < .005$ ). On the other hand, similarity had no major effect on the similarity decision task ( $p = .161$ ). Factually, direct comparison between the two tasks for 18 AD patients revealed significant interaction between the similarity and task type ( $p < .001$ ). In the latter task, AD patients often excessively associated the given dissimilar words. They said everyone should wear a suit to go to hotel, so suit and hotel are similar or a dancer is shining, thus dance and shine are similar. The results have shown not only the semantic difference between pictures and language but also the ambiguous meaning boundary of words in AD.