

7th International Conference on
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The relationship between lexical retrieval in discourse and cognitive functions in dementia

-In comparison with the elderly population -

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Background

Decline in discourse

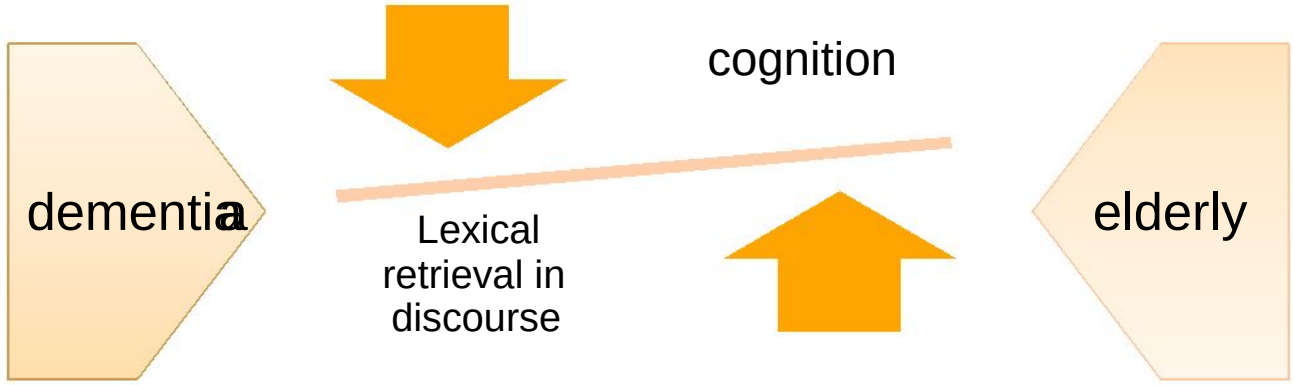
- The word production or lexical retrieval in discourse would be deteriorated with age,
  - even though cognitions such as confrontation picture naming, memory functions were intact (Yoshimura et al., 2016) .

Indicator of dementia

- Moreover, deficits in lexical retrieval in written discourse were reported to be an early indicator of Alzheimer's disease better than other cognitive tests,
  - such as confrontation picture naming (Pekkala et al. ,2013).



- Our aim is to explore the relationship between the abilities of lexical retrieval in oral discourse and the cognitive dysfunctions in dementia in comparison with the results in elderly.
  - We sought to examine the following;
    - What **aspects of cognitive deficits in dementia** would cause deteriorated lexical retrieval in **discourse**,
      - to know <u>why discourse task would be efficient t</u>o evaluate dementia.
    - The **characteristics** of dementia and elderly in oral discourse.





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Methods

Demographic data	n=19			
age (years old)	76.32±6.46 (69-91)			
gender	male 11	female 7		
Education (years)	11.75±3.40			
Diagnosis	Alzheimer's Disease 15	Frontotemporal Lobar Degeneration 3	argyrophilic grain dementia 1	
Clinical Dementia Rating	CDR0.5* 10	CDR1 7	CDR2 1	CDR3 1

CDR 0.5* is basically regarded as pre-dementia state. However, recent studies (Morris et al., 2001) reported CDR0.5 possibly represents early stage of dementia. Therefore we included CDR0.5 as dementia.



- Discourse task
- Cookie Theft Picture (**CTP**)
  - from Boston Diagnostic Aphasia Examination (Goodglass & Kaplan, 1983)
  - Nouns and verbs were counted for analysis.

Word retrieval in discourse



- Other neuropsychological tests
- **Naming**
  - Confrontation picture naming
- Category Fluency Test (**CFT**)
- Letter Fluency Test (**LFT**)
  - Word Fluency Test (Saito et al., 1992)
- Rey's Auditory Verbal Learning Test (**AVLT**)
  - Sum of recalled words from 5 trails

Neuropsychological tests

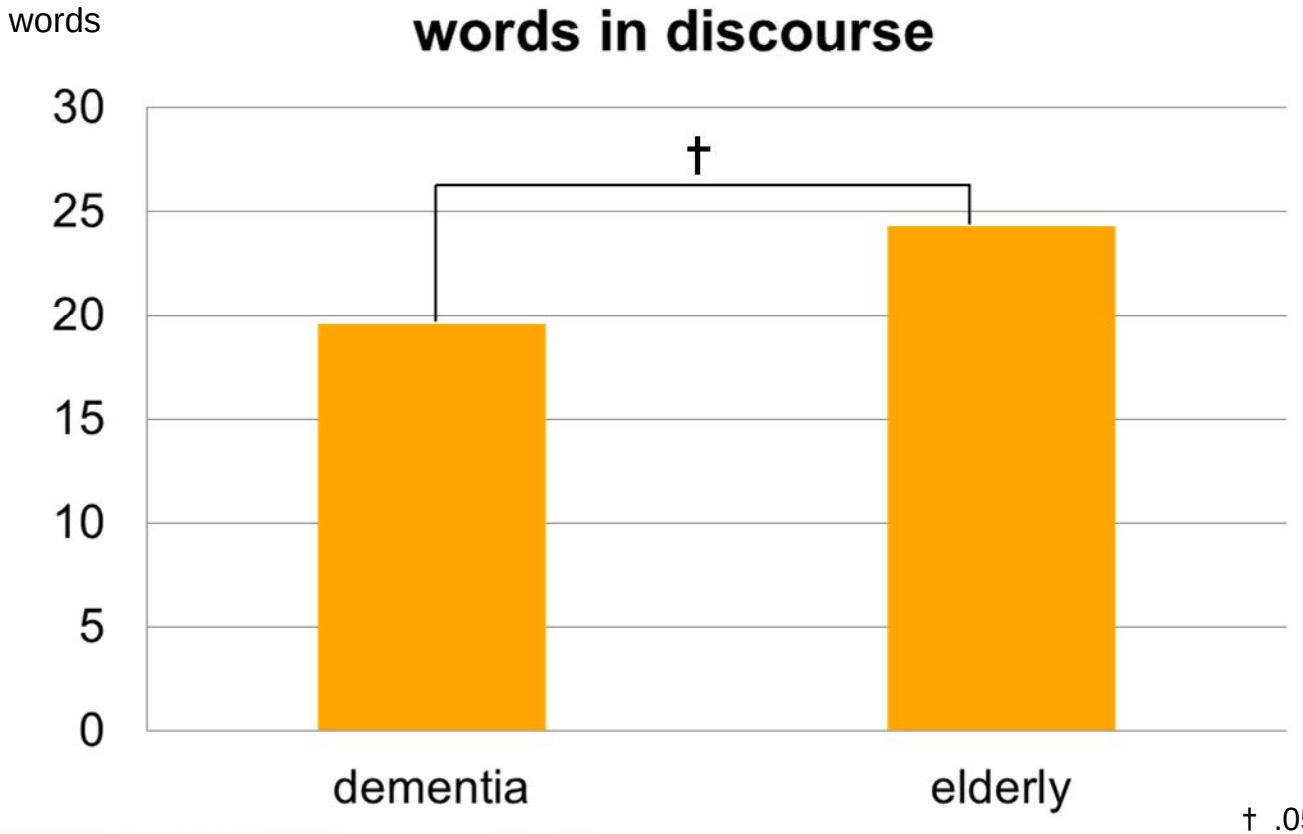


The results of the elderly were referred to a study of Yoshimura et al. (2016).



Results
Comparison of discourse task between dementia and elderly

- Lexical retrieval (words) in discourse of dementia were less than those of elderly.



† .05<p<.10



Relationship between discourse tasks and cognitive functions

- The relationship between lexical retrieval and cognitive functions of dementia were different from that of the elderly.

dementia	Age	CDR	naming	CFT	LFT	AVLT
Words in discourse	.38	**-.39 †**	.39	**.50***	.34	.01

elderly	Age	CDR	naming	CFT	LFT	AVLT
Words in discourse	**-.48***		.14	.32	**.36 †**	**.44***

† .05<p<.10
* p<.05



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Conclusion and Significance

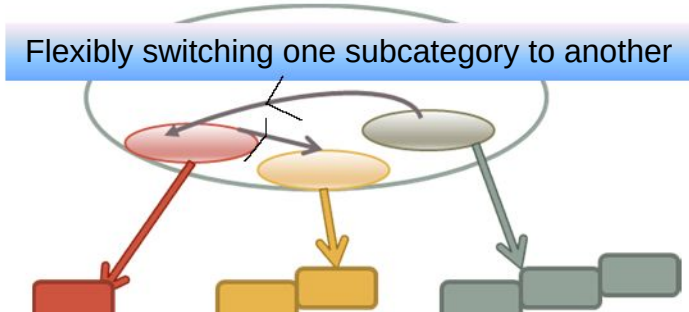
- **The characteristics of oral discourse in dementia and elderly were different quantitatively and qualitatively .**

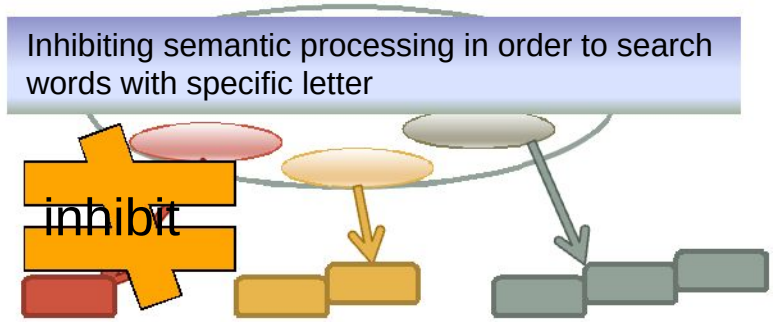
dementia

- **Worse than elderly.**
- Discourse related to
  - **dementia severity ,** not by age as in elderly.
  - **Flexibility in word retrieval**

elderly

- **Better than dementia.**
- Discourse related to
  - **age** (Yoshimura et al., 2016) **.**
  - **memory or attention for inhibition ,** not by word retrieval itself as in dementia.







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- It became clear that **discourse task** would be an efficient tool to **evaluate dementia** in clinical settings,
  - Because ways of performances in discourse could distinguish elderly from dementia quantitatively and qualitatively.

- We will seek more thoroughly to know;
  - How different patterns of performances would be detected, such as characteristic responses by memory decline with age and by memory and word processing decline with dementia.
  - What aspects would influence deteriorated discourse in other dementia populations.

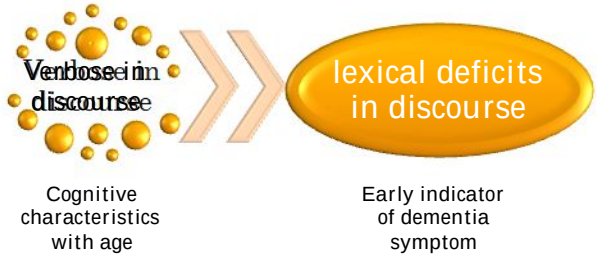


Figure 1
Lexical retrieval declines were shown in elderly, but this characteristic would be an early indicator of dementia.



References

- Goodglass H, Kaplan E (1983) The Boston Diagnostic Aphasia Examination. Boston: Lea & Febi.
- Gold D et al (1998) Measurement and correlates of verbosity in elderly people. Journal of Gerontology 43(2): 27 -33.
- Pekkala S et al (2013) Lexical retrieval in discourse: An early indicator of Alzheimer's dementia. Clinical linguistics & Phonetics 27(12):905 -921.
- Yoshimura T et al. (2016) Word production in discourse and cognitive functions in elderly - the implication for the demented population -. International Psychogeriatric Association Asia Region 2016 Meeting Abstract Book 188 -189.

