Modified Semantic Feature Analysis for the Anomia and Dysgraphia: a Case Study in Chinese

Olivia Ho Yi Yeung, Edwina Hung and Dustin Kai Yan Lau

Modified semantic feature analysis for the anomia and dysgraphia: a case study in Chinese

Olivia H.-Y. Yeung[1]*, Edwina M.-H. Hung[2], and Dustin K.-Y. Lau[1]

[1] Department of Chinese and Bilingual Studies, Hong Kong Polytechnic University, HKSAR, China
[2] ENT Laser Hearing and Speech Therapy Centre, HKSAR, China

*corresponding author, olivia.hy.yeung@polyu.edu.hk

Introduction

Semantic Feature Analysis (SFA) is an intervention that aims to improve the naming performance of neurogenic patients with anomia using a structured framework that guides the patients to analyze the semantic features of the naming targets. A recent single-case study (Tam & Lau, 2019) has reported evidence that SFA, modified with the use of an unstructured odd man out task, was also effective in improving the naming performance of a patient with anomia after surgical intervention of atrioventricular malformation. The improvement was attributed to the procedures of the odd man out task which encouraged detailed comparison of distinctive semantic features that facilitated semantic processing. The current study aims to replicate the findings of this modified SFA with adaptations for a Cantonese-speaking individual with anomia resulted from traumatic brain injury (TBI). In addition, the extent to which the patient's written naming performance was improved after the treatment was also observed.

Methods

YFS, a 72-year-old right-handed female Cantonese speaker with naming difficulties due to TBI four years before the study was recruited. No visual, hearing, or motor impairment was reported. Results of initial assessments indicated that she had a preserved semantic system but poor oral and written naming abilities. Twelve treatment sessions were conducted over six weeks using the modified SFA.

Results

Table 1 summarizes the oral and written picture naming performance of YFS in the pre-treatment, post-treatment and maintenance phases. Results of McNemar's tests indicated that YFS showed significant improvement in oral picture naming of 217 selected pictures in Snodgrass and Vanderwart (1980) immediately after [$X^2(1) = 8.446$, $p < .05$] and two weeks after treatment [$X^2(1) = 22.753$, $p < .05$]. Improvement of accuracy in written naming was not statistically significant, but Chi-square test results indicated a significantly reduction in semantic errors was observed.

Conclusions

The current study extended the findings of Tam & Lau (2019) that the modified SFA is also effective in promoting the naming performance of neurogenic patients with anomia resulted from TBI. YFS's reduction in semantic errors in the written naming performance after the treatment also supported the importance of the lexical-semantic route of writing in Chinese

(e.g. Lau, 2020). Theoretical and clinical implications as well as specific adaptations we applied to accommodate the cognitive diversities associate with TBI will be discussed.

References

Lau, D.K.Y. (2020). The Dual-route Account of Writing-to-Dictation in Chinese: A Short Report. *Language and Speech.* DOI: 10.1177/0023830920967696

Snodgrass, J. G., & Vanderwart, M. (1980). A standarised set of 260 pictures: Norms for name agreement, image agreement, familiarity and visual complexity. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 6,* 174–215

Tam, M.H.C., & Lau, D.K.Y. (2019). Modified semantic feature analysis for anomia: a single case study. *Clinical Linguistics and Phonetics, 33(10-11),* 1031-1049. https://doi.org/10.1080/02699206.2019.1594382

Table 1

YFS's oral and written picture naming performance in pre-treatment, post-treatment and maintenance phases

Oral Naming

	Incorrect (Post^)	Correct (Post)	**Total**
Incorrect (Pre*)	74	50	**124**
Correct (Pre)	24	112	**136**
Total	**98**	**162**	

	Incorrect (2Wks#)	Correct (2Wks)	**Total**
Incorrect (Pre*)	54	70	**124**
Correct (Pre)	23	113	**136**
Total	**77**	**183**	

Written naming

	Incorrect (Post)	Correct (Post)	**Total**
Incorrect (Pre)	139	48	**187**
Correct (Pre)	32	38	**70**
Total	**171**	**86**	

*Pre: Pre-treatment; ^Post=Immediately after treatment; #2Wks=Two weeks after treatment