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Effect of task on writing in Wernicke’s agraphia

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Introduction

The motivation for this study was to contrast two approaches in assessment of agraphia – Russian physiological and psychological tradition with the cognitive neuropsychological approach (CNP). According to Russian psychology and physiology: 1) the goal oriented activity of the subject affects the structure of function (Bernstein, 2008; Anokhin, 1980); 2) specificity of human psychological functions is culturally and historically determined (Vygotsky, 2005; Luria, 2000; Leon'tiev, 2000). These positions are not always taken into account in the CNP approach, that explain the pattern of errors observed across most cases as a result of damage to one or more cognitive pathways.

Goal: to reveal a reorganization of the writing disorder dependent on the cultural content of writing tasks in patients with Wernicke's agraphia.

Methods

3 tasks requiring communicative, mnestic and regulatory functions of writing. The tasks included writing a letter, written description of a picture in order to remember it and writing out a plan for execution of tasks.

Results

Tasks were administered to 29 individuals with Wernicke’s agraphia due to acute ischemic stroke in the left hemisphere. According to non-parametric Wilcoxon tests the overall number of errors in the regulatory task was significantly greater than the number of errors in the mnestic task (z=2.01, p = .044). Differences in the number of errors were not affected by the frequency of words and their phonetic complexity. This result is explained by low importance of spelling accuracy in the regulatory task. On the other hand, the mnestic task requires an accurate description, as the subjects had to use the text in a week and choose on the basis of their description one of two very similar pictures.

Discussion

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According to Russian psychology and physiology the cultural functions of writing will determine their behavioral manifestation including written word production. These characteristics of cognitive processing are not considered in the CNP approach that instead focuses on the functional architecture of the written language system irrespective of task goals. Despite these differences, disorders of writing in Wernicke’s agraphia include the phenomena that are assumed in both paradigms, such as multicomponent structure of mental functions (Mikadze at el., 2012; Kozintseva at el., 2012).

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References


