

## REVIEW

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NBU strand 7.4. Public health

For acquiring the scientific degree "Doctor" in professional field 1.2. Pedagogy with candidate Emanuela Hrabar Shticka on the topic "Influence of phonological revision on oral and written language in aphasia"

The dissertation for acquiring a PhD on "Influence of phonological processing on oral and written language in aphasia" is located on a volume of 231 pages and contains the following chapters - theoretical overview, methodology of the study, results and discussions, conclusions and recommendations, limitations, conclusion and contributions. The studies and data from the different methods are illustrated with 28 graphs, 16 tables and 78 annexes. A methodology adapted and approbated by the author for studying phonological processing for Bulgarian language in patients with aphasia is presented in detail. The literature used is by 116 authors, of which 26 in Cyrillic and 90 in Latin. 26 in Cyrillic and 90 in Latin.

Thus presented the scientific paper meets all the formal requirements for dissertation for the degree "Doctor".

### 1. Significance of the research problem in scientific and applied terms.

The relevance of the presented paper is undeniable – accurate and detailed diagnostics of linguistic, gnosis and praxis disorders are made in patients with aphasia, and why not in other diseases affecting the cerebral cortex, only in large university neurological clinics. This is due, on the one hand, to a lack of suitable and easily applicable diagnostic tools (except for the adapted Boston test and that of Kertész), and on the other hand, the lack of adequate training in medical and speech therapy specialists.

### . Precisely formulated goals and objectives of the dissertation

The aim of the study is clearly formulated in its two aspects: creating a diagnostic

tool and assessing the influence of phonological processing on oral and written spoken language.

Here, however, I want to make a provocation for discussion on the topic "what is phonological rework", because in the material I did not find a clear and specific explanation of this basic term for the dissertation. To what extent phonetic / recognition and identification of speech sounds / and language / phonological / interact and cover. For the Bulgarian language, phonemes have a dual character – on the one hand they are purely physical signals, and on the other they carry a specific language code. This code Mavlov called it "elementary" and is precisely the semantic signal of linguistic competence. An important argument for the existence of this unit is the fact that deaf persons who have never heard a phoneme master language through other senses, which probably also have a phoneme language code elementable.

That's why I think we need to clarify exactly what a "phonological rework" is— whether it's recognizing and classifying speech sounds or the language code they carry. As far as I understand from the research, it is assumed that this is a generalizing concept, including both the identification of the speech sound and its language affiliation.

The tasks are too general and remote from the main goal. It would be good to formulate tasks related to the topic and purpose- for example, an important task is to make a comparative analysis between the data of phonological processing in persons with aphasia and those without this violation.

Another task is to make a comparative analysis of the data from phonological processing in patients of different age, education, etc., which in fact the bayonet does, and this is perhaps one of the most valuable results of the study, but no task is described. The main hypotheses presented are also too general – in principle it is clear that in aphasia language disorders are the result of problems in phonological processing. However, the subhypotheses are original, bring a new view of the problem "aphasia" and imply the solution of interesting and contributing questions. I don't know of any publications that present a correlative relationship between

phonological rework and patient age, phonological rework, and education, gender, and place of residence. Too interesting and important both in diagnostic aspect and for planning the therapeutic strategy is the study of the influence of the limitation period of the occurrence of aphasia and phonological processing, although the statistical analysis does not show significant statistically reliable significance. The study was done on 60 individuals – 30 experimental group with aphasia, and 30 – a control group without disorders of this type. The two groups correspond to each other both in age and gender. Very good impression is made by the detailed research and presentation of the profession, place of residence, educational degree and the leading hand of the studied by both groups. In the experimental group there are persons with different aphasias- most of all those with sensorimotor aphasia, relatively less motor, there is conductor and several - with partial motor aphasia. The contingent of the study thus presented is quite sufficient to achieve the main goal. The methodology used is too detailed, covers all aspects of the lives of the surveyed persons and this fully compensates for their relatively small number.

Degree of knowledge of the state of the problem and correspondence of the literature used.

The dissertate has presented too much scientific literature related to the problem under study. The theoretical review is written in exquisite style and language and illustrates very well its ability to analyze the data from a number of studies. All known Bulgarian similar studies are presented with a detailed presentation of the results of their research and its own interpretation of the data and theoretical formulations. The rich review of foreign authors, leading aphaziologists and researchers on this side of the impaired language function in patients with aphasia – phonological processing – makes a very good impression. Theories of the sequence of perception and analysis at the semantic abstract level followed by the phonological extraction of the concrete sounds in decoding and subsequent praxic realization of the word are traced. In summary, I believe that the dissertant knows the state of the problem very well and adequately uses the scientific literature. All this enables the author to develop a well-grounded theoretical model of the study - phonological revision is fundamental for the realization of language abilities in

individuals, and in patients with aphasia it, this processing, is pathologically changed and this negatively affects the possibility of adequate language communication both orally and in a written version.

Compliance of the selected methodology and methodology of research with the set goal and tasks of the dissertation. The chosen methodology of research fully corresponds to the set goal and tasks in the dissertation. Two tests were selected to study language abilities and disorders in patients with aphasia – "Boston Test", adapted for Bulgarian language by a team of authors under the guidance of Prof. Mavlov, and "Standardized assessment of phonology in aphasia" by Kendall et al. The second test was adapted for Bulgarian language for the purposes of this study after approval by the American author and an ethical committee at Sofia University. In practice, this adaptation is one of the main contributing elements of the dissertation - appropriate words in Bulgarian have been selected, a design of each subtest from the battery has been created and the conditions for collecting, storing and processing the results have been improved. The test /SOFA/ contains a significant number of subtests – reading, auditory phonological processing, repetition, segmentation, reading aloud of logatomists, pseudoophones and more.

SOFA covers all elements of language competence and opportunities for verbal communication, provides a wealth of information about pathological changes and manifestations, but is too long for application in clinical practice.

The data from the application of the test were processed in great detail and with different statistical techniques. This is one of the positive aspects of this dissertation. Thorough and comprehensive statistical processing of the data from all subtests, as well as the search for correlation relationships between age, education, statute of limitations of aphasia and place of residence of patients and the level of language disorders are a valuable contribution to diagnosis and hence to adequate therapy in aphasia. Although there is no statistically reliable significance of these influences outside the phonological revision, I believe that this result is a significant contribution to this paper. The author also finds very

significant mutual influences between phonological revision and the manifestations of linguistic Disorders in patients with aphasia, which are reflected in the chapter "Conclusions".

Descriptive statistics, correlation analysis, factor analysis, regression analysis and ANOVA have been used to one degree or another. In practice, some of these analyzes provide similar information and thus create a sense of much digitization, data and interdependencies represented by numbers, and the analysis, discussion, discussion of the results obtained are lost. A major question when examining a pathology, whatever it may be, is "why" these results are obtained, what are the possible causes, etc. For example, the dissertant reports data of Kalpachka, in which the age of patients is a significant factor, and in the current study there is no such dependence. Why is this so - is the contingent different, the methodology is inadequate or (which is quite possible) too much statistical processing leads to this different result?

Description of contributions:

The dissertation illustrates that the candidate has in-depth theoretical knowledge of the respective specialty and abilities for independent research.

He is a major contribution to the adaptation and approbation of a reliable test for the study of phonological processing in patients with aphasia – SOFA. The participation of the dissertant in this process and, above all, its successful application to the study of phonological processing is undoubted.

Secondly, the method used to study and evaluate phonological processing in patients with aphasia will be a very good tool for the work of speech therapy specialists in practice.

The accumulated empirical material from this large-scale linguistic study is a very good database for comparative analysis with other current and future studies on individuals with language problems outside aphasia.

Personal qualities of the author

I don't know the author Emanuela Shtitka,

But from the presented CV note, several important things are impressive:

- Her professional development is related to the specialty of speech therapy, both education and practical realization;
- the dissertator is fluent in English written and spoken;
- She is a supporter of continuing education - since 2017 she has participated in 10 different qualification courses related to speech therapy issues;
- from the presented reference Emanuela Shtitka has one joint article with the scientific supervisor in a peer-reviewed journal and another 5 participations with reports at scientific conferences, some with international participation. All publications are thematically related to the dissertation development.

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#### Conclusion

I propose to the honorable members of the scientific jury to award the scientific degree "Doctor" because:

- the dissertation works meet the requirements for scientific development both in theoretical and research aspects. There are useful contributions to speech therapy theory and practice;
- there are enough publications in relation to the subject.

Date 12.04.2024

Signature: prof. Violeta Boyanova .....