

OPINION

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Regarding the PhD thesis of Venera Russo
Entitled: „Neurophilosophy of Second Language Learning: Conscious and
Unconscious Aspects“, professional field 2.3. "Philosophy"
PhD program "Philosophy with English Language Teaching"

Venera Russo's PhD thesis was developed under the scientific guidance of Prof. Aneta Karageorgieva at the Faculty of Philosophy of the University of Sofia St. Kliment Ohridski". It is based on three scientific publications in which Venera Russo is the only author. All three are in English. Two of them were published in 2020 in *In Statu Nascendi - Journal of Political Philosophy and International Relations*, and the third has been accepted for publication in the same journal and will be published until the end of 2022. In confirmation of this, the editor-in-chief of the journal provided a letter of its acceptance. All three publications are on the field of the thesis.

The thesis is a voluminous work of 190 pages, which contains three chapters, a conclusion section and a list of cited literature containing 374 sources.

The literature review is included in every chapter. It is tightly written, detailed, and very thorough. I am impressed by the amount of information that Venera Russo was able to analyze and include into her work. Another merit of the discussion of the included literature is its relevance. Thus, 3 publications are from 2022, 5 - from 2021, 17 - from 2020, 23 - from 2019, etc. Also noteworthy is the adequate description of current ideas about the working modes of the human brain and, in particular, the acquisition of a second language in the light of modern ideas about the functioning of speech-related brain centers.

Comments on the dissertation. In the presented work, a serious attempt has been made to summarize the latest achievements in the field of neuroscience and to discuss them in the light of philosophical views on the role of mind, human body and consciousness in language learning with an emphasis on that of a second language.

The main statement in VeneraRusso's work is "that the problem of second language acquisition is not a problem separate from first language acquisition" (p. 9, paragraph 4 (§) from the Abstract in Bulgarian). It would be interesting to comment on the presence/absence of peculiarities in the acquisition of a second language from a completely different language family, which would confirm or refine the above statement.

A good impression is made by the careful attitude to the reductionist approach examining cognitive processes (p. 10, § 1), where extreme opinions are avoided.

Running throughout the work is the idea that "language experience is essentially an anthropological experience that occurs in a shared state of being." (p. 10, 4§). Indeed, languages are the fruit of collective creativity that are learned and used in a social environment. However, there is also an individual component – the quality of language acquisition and use depends on individual abilities and experience, as well as on self-awareness.

The review of the functioning of language memory and the possibilities of engaging different cortical areas in the memorization of words are excellently discussed (pp. 12-13). It has been correctly mentioned that the distribution of memory traces in the cerebral cortex is still unclear, but it is most likely to be widely fragmented, as exemplified by the word banana.

Some clarification can be applied to the statement that "neuroplasticity contradicts the most common critical period hypothesis that some cognitive functions and language must be acquired" (p. 18, last §). Neuroplasticity is a property of the brain and the nervous system as a whole, that it is not the same, not even comparable during the individual periods of life. In certain cases, there is a short period (time window) of plasticity. So, e.g. if the eye of a newborn kitten is darkened for few days, after that it will not see with it without any inherited

defects, because the period of formation of the optic pathways from the retina to the visual cortex, which obligatory requires light stimulation, is missed.

In combined speech and motor task experiments, such as the mentioned experiments of Glenberg and Kashak (2002), the role of the distraction factor is not taken into account. When performing them, attention is focused more on one of the functions, which is dominant, while the other is suppressed. Therefore, both - speech and motor would be performed more effectively if they are performed sequentially. For this reason, I consider as speculation the conclusions of the cited work by Glenberg and Kashak to be (pp. 19-20).

The claim that "neuroplasticity is the means by which experiential collective consciousness imprints itself on the brain" (p. 23) is inaccurate. The definition of neuroplasticity is the adaptive ability of the brain to change as a result of impacts due to significant changes in the organism or environment. The recovery after a stroke of motor function e.g. is also result of neuroplasticity, but it is not connected with collective consciousness.

I appreciate Venera Russo's ability to critically discuss extreme materialistic views that interpret scientific data to support ideologies. It may be added here that science is limited in studying humans, beyond which the objective scientific method cannot be applied. E.g. in patients hearing voices, activation of areas of the cerebral cortex can be demonstrated as in normal speech, in others - related to emotions that these voices give rise to or others related to memory, but there is no way to determine the source of these verbal messages (from where they come). The main possibilities are either telepathy or self-arising in the brain, and the researcher's view, if one of them is chosen, will be unscientific because it will be based not on evidences, but on the researcher's personal opinion (p. 27, 2§). On the other hand, neurophysiological research has advanced so much that it is now possible to read thoughts using a modified electroencephalographic technique by intracranial recordings (Martin et al., *Brain Lang.* 2019, 193: 73-83). Moreover, mechanical structures such as advanced prostheses

can be controlled with just a thought (Bates M., 2017, Brain-Machine Interfaces: Converting Thoughts. <https://www.brainfacts.org/in-the-lab/tools-and-techniques/2017/brain-machine-interfaces-converting-thoughts-into-action-092717>) and retinal implants could replace damaged retina (Mullin E., Blind Patients to Test Bionic Eye Brain Implants. MIT Technol. Rev. 2017), etc.

The abstract is in two versions - in Bulgarian and in English. It is sufficiently detailed and reflects the main topics and statements included in the PhD thesis. It consists of 36 pages presenting the three chapters of Venera Russo's dissertation, the main claims and contributions, and a list of the three publications related to it.

Remarks. In the abstract, the names of the cited authors are often given in Cyrillic, while at the end they are cited in the Latin. It would be good if all citations in the text body were unified according to the standard (names of author(s) in Latin, year). In both versions of the abstract, the content of the dissertation is included with the corresponding numbering, which is absent in the abstract, and in the English version of the abstract are given the pages as they are in the thesis. The abbreviation fMRI is not introduced.

Personal impressions. I don't know Venera Russo. I judge her by the materials provided to me, consisting of a doctoral thesis, an abstract and scientific publications.

In conclusion, I consider that the set goal and tasks have been successfully fulfilled. In terms of structure and content, the presented PhD thesis and the related publications satisfy the minimum national requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria, the Regulations for its application for "Doctor of Philosophy" and the Regulations of University of Sofia "St. Kliment Ohridski". Based on the above, I give my positive assessment of the presented dissertation, abstract, publications, conclusions and contributions. I propose to the respected scientific jury to award Venera Russo the educational and scientific degree "Doctor of Philosophy" in professional field 2.3. "Philosophy" (Philosophy and English Teaching).

Signature:

Sofia, 07.12.2022

(Prof. Dr. Hristo Gagov)