

REVIEW

by Prof. Lilia Gurova (New Bulgarian University)

for Venera Russo's dissertation on

‘Neurophilosophy of Second Language Learning: Conscious and Unconscious Aspects’,

submitted for awarding the degree of Doctor in Philosophy

The presented dissertation has 189 pages and contains an introduction, three chapters, a conclusion, a list of references (289 titles in total), and acknowledgments.

The study is focused on the acquisition of a second language. The author Venera Russo uses as a starting point the philosophical (epistemological) question "what kind of knowledge is knowledge of language and how is it acquired". The answers she arrives at and presents as a theory of language acquisition build on the synthesis of knowledge from different fields – neuroscience, linguistics, psychology, sociology. Central to the presented theory are the claims that the same biological structures and processes are involved in first (native) and second language acquisition and that differences in Language 1 and Language 2 acquisition are not due to age (there is no critical period for acquisition of language), but to other factors that are part of the language experience and the environment in which that experience takes place.

In what follows, I will briefly review the main parts of the dissertation to show how they contribute to the clarification and argumentation of the author's central claims, after which I will present my assessment of the main contributions of the dissertation and its main deficiencies.

In the introduction, Venera Russo has shown first how the interest of philosophers in neurosciences arose and further she distinguishes the two main forms through which this philosophical interest manifests itself: the philosophy of neuroscience, dealing with conceptual problems arising within neuroscience itself and neurophilosophy (a term coined by Patricia Churchland in 1986), which uses neuroscientific knowledge to solve philosophical problems. Venera Russo defines her approach as "neurophilosophical" insofar as she builds on knowledge

from the field of neuroscience (as well as from other scientific disciplines) to solve the philosophical problem of second language acquisition. The author's motivation is also explained in the introduction: it comes from the realization that there is a gap in the interests of philosophers, who are focused almost entirely on first language acquisition and ignore (with few exceptions - Goodman, Chomsky) the issue of second language acquisition.

In the first chapter, entitled 'Mind, brain, language', Venera Russo presents the starting points of her research. She dwells successively on Paul Broca's discovery that laid the foundations of neurolinguistics (a term coined about a century later), on the cognitive revolution that caused the demise of the behaviorist theory of learning, on Chomsky's insights about the intimate relationship between linguistics and philosophy, and on the view of the latter that the problem of language learning is essentially a philosophical problem (Chomsky calls it 'Plato's problem'). Another important starting point for Russo is Patricia Churchland's idea of philosophy as the place where the interdisciplinary interaction between different scientific fields takes place. Russo makes the correct remark that early neurophilosophers such as Patricia Churchland were materialists, even eliminative materialists, but at the same time she accepts that the neurophilosopher is not condemned to be a materialist (p. 21) insofar as (according to her) the knowledge provided by the neurosciences does not directly imply materialism. Moreover, Russo shows that the neurophilosopher has tools that allow him to approach the problems of interest without taking sides in the dualism-materialism debate. A third important starting point of the study of Russo presented in this chapter is the concept of linguistic relativity. In Russo's interpretation, this concept implies that every language is an integral part of a conceptual system, and its acquisition implies the acquisition of that system as well. In this sense, second language acquisition implies the acquisition of a different conceptual system, and this should be accounted for in a theory of second language acquisition.

In the second chapter, entitled 'Neuroscience and language acquisition: What do we know?' Venera Russo describes a number of key findings in the neurosciences and what they tell us about the perception and understanding of language, as well as about language acquisition and use in the process of communication. Special attention is given to several models. One of them is the model of Edna Andrews (2014), who introduced the term 'cognitive neurolinguistics' to denote the scientific field concerned with the study of the brain structures and processes that

make possible the use of more than one language. In her model, Edna Andrews rejects the common prejudices about the existence of a critical period and an innate module for language acquisition, and to these prejudices she counters the notions that interaction with the environment, rather than the time in which that interaction takes place, is crucial for acquisition of both first and second and subsequent languages, and that the same brain structures and processes underlie different language functions and first and second language operations. Kroll & Stewart's (1994) *Revised Hierarchy Model* (RHM) and the *BIA+* model are also discussed and compared. In the RHM model, Language 1 and Language 2 have different vocabularies, share a common conceptual base, and there is an asymmetry in the relationship between the vocabularies and the conceptual base. The *BIA+* model does not assume an asymmetry in the operation of Language 1 and Language 2. Russo's conclusion is that, based on the available data, at this stage none of these models can be unequivocally preferred over the other. However, with regard to the widely debated hypotheses of innateness (Putnam, 1967) and of the existence of a critical period for language acquisition, Russo takes an unambiguously critical stance, which she supports with arguments based on results from behavioral and neuroscience research.

In the final third chapter 'Embodied cognition and language acquisition', Venera Russo returns again to the question of whether the use of a neurophilosophical approach condemns us to reductionism. She adopts Steven Rose's (1992) notion that reductionism is a method that does not oblige us to accept a particular ontological assumption about how things actually are. Russo takes this stance when she comments on the neurophilosophical, inherently reductionist, approach to consciousness. She adopts Damasio's relational notion of 'extended consciousness', which is defined in terms of the awareness of the self of his past and future, and which Damasio distinguishes from 'core consciousness', or the self's awareness of what is happening here and now. Extended consciousness, according to Damasio and Russo, is a product of social interactions, and in this sense it is a collective consciousness. In the context of this conception, Russo sees second language learning as a "progressive attempt to take part in a collective consciousness" (p. 108). Reducing the uses of language to social interactions in which consciousness plays an important role, Russo finds support for this view in the discovery of mirror neurons and its implications, in theory of mind, and in the results of experiments showing the interaction between language and different sensory modalities, language and emotions, etc.

In the conclusion of the dissertation, the author's main statements are summarized in a philosophical theory of language acquisition, which does not distinguish between the acquisition of Language 1 on the one hand and Language 2 and subsequent languages on the other.

The most important of these statements are as follows:

- There is no fundamental difference in the processes involved in acquiring a first (mother) language and subsequent languages;

- It is not the age, but the "quantity and quality of language experience" that determines the success of acquiring a second language; in this sense, there is no "critical period" for language acquisition; accordingly, there is no innate "language module" that is activated in a certain period and is inaccessible to influences from the environment;

- Language ability is not amodal; sensory-motor processes and emotions are critically involved in the perception, comprehension and generation of linguistic expressions;

- Consciousness plays a key role in the acquisition of language, but not the individual consciousness, but the collective one, through the inclusion in which linguistic meanings are conceived and created;

- Language experience shapes the brain, which in turn influences language experience;

- Language is not just a "voice of thought", it is a situated action, i.e. 'situated sensory-motor experience'.

According to Venera Russo, the adoption of the above statements could have an important positive effect on the development of methodologies for teaching foreign languages.

Among the strengths of the presented dissertation, I would point out on first place the impressive literature review that has summarized theories and empirical findings from various fields of knowledge - neurosciences, linguistics, cognitive psychology, philosophy. The arguments on the basis of which Venera Russo takes sides in famous discussions such as those about the existence of an innate, impenetrable language module and of a critical period for the acquisition of language are not in themselves original, but the very aggregation of her positions to these discussions in a general theory can indeed be seen as an important contribution.

Without in the least belittling this contribution, I would also like to draw attention to some limitations of the presented research, as well as to ask questions that I could not find answers to in the presented text.

(1) Both in the introduction and in the conclusion of his work, Venera Russo indicates as his point of departure the statement that the problem of language acquisition, in particular, the acquisition of a second language, is a philosophical (epistemological) question about 'what kind of knowledge is knowledge of language and how is it acquired'. However, I do not find a direct answer to the first part of this question in the proposed text, so I put it again, slightly reformulated: if we have to answer briefly 'what kind of knowledge is knowledge of language', what should the answer be?

(2) The criticism of hypotheses about the innateness of some linguistic structures defended by Putnam (1967) and Chomsky (1980), although valid, is essentially incomplete. This is because some of the central arguments of the defenders of these hypotheses are not addressed, as the so-called 'poverty of stimulus' argument proposed by Chomsky (Chomsky, 1980). I would recommend that the author comment during the defense on Chomsky's argument based on the alleged 'poverty of stimulus'.

The submitted abstract of the dissertation (37 pages, in Bulgarian and English) correctly reflects the content of the dissertation. In the Bulgarian version, there are several inaccuracies in the translation of 'faculties' and 'sensory-motor', but of course, they are not the fault of the dissertation author.

Venera Russo reports 3 publications: 2 of them on the topic of the dissertation, one of them in print. All three papers are published in the same journal – *In Statu Nascendi* (ISSN: 2568-7638). Two of the publications refer to the same pages, in the same issue of the journal (2020/1), which is most likely a technical error. I would recommend the author to try to publish parts of the dissertation in other journals, including journals referred in *Scopus* and *Web of Science*. This would lead to greater visibility of the ideas presented in the dissertation.

In conclusion, the author of this dissertation demonstrates impressive knowledge in various fields of philosophy and science (neuroscience, cognitive science, linguistics, etc.), as well as analytical

and generalization skills, which allowed her to make an important contribution to the study of second language acquisition. Based on this I declare that the presented work possesses the essential characteristics of a successful doctoral dissertation and, therefore, I propose that Venera Russo be awarded the degree of Doctor in Philosophy.

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