



SHORT REVIEW

of the PhD thesis of **Todor Lazarov**,
Department of Computational Linguistics, Institute of Bulgarian Language "Prof. Lubomir
Andreychin"

Title of the dissertation: "Bulgarian-English grammatical parallels in terms of machine translation"

Reviewer: Prof. Yovka Tisheva, Department of Bulgarian, Faculty of Slavic Studies
Sofia University "St. Kliment Ohridski"

Todor Lazarov holds a bachelor's degree in Bulgarian philology since 2014. In 2015, he graduated from MA program "Computer Linguistics. Internet Technologies in the Humanities", Faculty of Slavic Studies, Sofia University "St. Kliment Ohridski". From January 2016 until December 2018 he was a PhD student at the Department of Computational Linguistics of the Institute of Bulgarian Language. His supervisor is Prof. Svetla Koeva. During the studies, Todor Lazarov increases his knowledge and professional skills by taking part in the Summer School of Digital Humanities, 1 - 11.09.2016 in Hissarya, and two short-term specializations: 3 - 10.02.2018 at the Research Institute of Information and Language Processing, University of Wolverhampton; 19 - 25.01.2019 at Text Laboratory, Department of Linguistics and Scandinavian Studies, Faculty of Humanities, Oslo University.

In 2019 and 2020, Todor Lazarov held two bachelor lecture courses at New Bulgarian University: "Language Resources and Computer-Assisted Translation" and "Terminology Databases", as well as two courses in the International Master's Program in Technology in Translation and Interpreting: "Computer-assisted translation and localization" and "Applications for computer-assisted translation".

The data for the PhD courses and exams confirm that doctoral student has acquired a deep knowledge of computational linguistics, especially with regard to machine translation, and developed his teaching skills. According to the documentation submitted, all requirements of the Law for the development of the academic staff in the Republic of Bulgaria and the Regulations for acquiring scientific degrees and holding academic positions at the Institute of Bulgarian Language at BAS are met.

Todor Lazarov's dissertation "Bulgarian-English grammatical parallels in terms of machine translation" consists of an introduction, four chapters, a conclusion and a list of references. The review of publication quoted (publications in Bulgarian, English, Russian, German, and Spanish) shows the in-depth theoretical knowledge of the doctoral student. A hyperlink to the compiled by the PhD student parallel corpus with related verb forms is included at the end of the text.

Globalization and dynamic contacts in all social spheres require quick access of users with different language competencies to documents created in different languages, which leads to the increasingly active use of automatic (machine) translation. To improve the quality of machine translation, both theoretical research and experimental work are needed in order to reach effective (technical) solutions for the automatic processing of language information and translation of different types of text. This defines the relevance of the dissertation in scientific

and applied terms and its importance for expanding theoretical knowledge in a new interdisciplinary field between computational linguistics and translation studies, related to automatic and computer-assisted translation.

First chapter of Todor Lazarov's dissertation indicates that the author is well acquainted with the general theoretical models for presenting the content of the hyper-category of time and the temporal forms system. The author reviews the literature on the topic and comments statements and conclusions from current studies on Bulgarian and English verbal features. The conceptual framework of the thesis intertwines mainly the view of Bulgarian scholars Ivan Kutsarov, Georgi Gerdzhikov, Ruselina Nitsolova. More reasons for the review of English texts from 17th – 19th centuries, practical English grammars published for purely educational purposes and early Bulgarian grammars from 19th century are needed.

Detailed presentation of morphological categories of tense, aspect and taxis in Bulgarian and tense and type of action in English creates a reliable basis for describing temporal systems in both languages and finding the correlations between forms. The methodology applied for the comparative study of Bulgarian and English temporal systems corresponds to the scientific tasks of the research. Its application leads to an objective and consistent presentation of grammatical parallels based on the descriptions of temporal meanings in both languages. On this basis, the dissertation formulates its hypothesis about the translation correspondences and the semantic transfer of grammatical information in translation.

Chapter second shows that the author is well informed of the approaches and methods used in machine translation. The principles of building language corpora as a resource for such translation are also discussed. Todor Lazarov applies reliable criteria for selection of language resources and compiling the parallel corpus. Methods applied for the development of corpus design and two-layer annotation of the linguistic data follow the criteria for building such type of language resources. Todor Lazarov's achievements in solving scientific and applied problems through modern methods of theoretical and computational linguistics are indisputable. The five contributions mentioned by the author can be summarized in two groups. A significant scientific and applied contribution is Lazarov's original solution to a current problem in machine translation concerning the mechanism of grammar information transfer. The comparative review of Bulgarian and English temporal systems can be used in future studies of grammar and translation theory and practice. The compiling of "Bulgarian-English parallel corpus with related verb forms" is an important applied contribution of the PhD student.

The abstract of the dissertation comprehensively and accurately presents the structure of the work, the results of the research, practical and experimental activities, as well as the scientific contributions of the dissertation.

In conclusion, I can say that the author has very successfully dealt with the objectives he has set in his research. Todor Lazarov's dissertation successfully works out a difficult theoretical topic, offering original solutions. The depth of the analysis and the originality of the findings meet the requirements for a PhD thesis. I appeal to the members of the Scientific Committee to give their positive vote and to recommend that Todor Lazarov be awarded the degree of Doctor of Philology.