



## OPINION

by a member of the scientific jury: Assoc. Prof. Dr. Ekaterina Tarpomanova, Sofia  
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for dissertation for obtaining the scientific and educational degree *doctor*

Author of the dissertation: Hristina Kukova, Department of Computational  
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of Sciences

Dissertation topic: Formal description of perceptive and mental predicates in  
Bulgarian (semantic disambiguation)

Hristina Kukova graduated from Sofia University "St. Kliment Ohridski" Russian philology (1997-2001) and Bulgarian philology (1998-2002). In 2002-2003 she received her master's degree in *Computational Linguistics. Internet Technologies in the Humanities* at the same university. In the period 2004-2008 she was a PhD student in the Department of Computational Linguistics of IBE, BAS, under the scientific supervision of Prof. Radka Vlahova. Since 2010 she has been working in the Department of Computational Linguistics, where she still works today and has gained significant experience in this scientific field. After successful preliminary defense she is presenting all the necessary scientific and administrative documents for the public defense.

The topic of the dissertation is original and covers current issues. The formal description of perceptual and mental predicates in Bulgarian with a view to capturing semantic ambiguity combines modern linguistic approaches with the possibility of their application in computer processing of natural languages and has both theoretical and applied value.

The dissertation covers 378 pages (the text is 280 pages) and is built on all standards for this type of work. The structure is clear and logical, the presentation is consistent. The text begins with an introductory part, includes four analytical chapters, ends with a conclusion, a bibliography and two appendices.

The introductory part makes a very good impression with a short and concise indication of motivation, object and subject, goals and objectives of the study, sources of examples, methodology, verb description model, terminology, resources used. With excellent linguistic

intuition, the author of the study defines her approach, placing semantics at the center as the main criterion for selection of the studied verbs, but also emphasizes their functioning as an important element of analysis. Throughout the study, the meaning of the verb is taken as the main center, and its realization - as a means of semantic disambiguation.

The second chapter of the dissertation is entitled “Meaning and automatic removal of semantic ambiguity”. The first part is devoted to the meaning, presenting different points of view for defining the meaning, ambiguity, which is a key concept for the dissertation, the relationship between ambiguity and homonymy, ambiguity and monosemy. The ambiguity criterion has been adopted for the purposes of the research with a view to the semantic disambiguation – a graphic designation with more than one semantic filling. From here, it is logical to move on to the second part of the chapter, which focuses on the automatic semantic disambiguation, according to the author's definition – the process of choosing an adequate meaning for a word from many predetermined possibilities. The correct separation of meanings is of great importance for the semantic disambiguation, which is why the study considers the types of criteria for this: paradigmatic (with two varieties – grammatical-paradigmatic and semantic-paradigmatic) and syntagmatic. The different approaches for capturing semantic ambiguity are presented in detail, and the type of information about the meaning they use is used as a basis for their grouping into several types. The aim is to select the most appropriate combination of linguistic data for the semantic disambiguation of the studied verbs.

The third chapter deals with the semantic-grammatical classifications of predicates. The author identifies two main types of classifications – semantic and aspectual, reviewing the relevant classifications developed by various authors, including private classifications covering verbs of perception. Based on the existing classifications, several features are derived for the purposes of the dissertation: relevance / irrelevance of meaning, orientation towards the Subject / Stimulus, agency / non-agency, causality / non-causality. I find these features well-founded and applicable to the topic of the work.

The fourth chapter, entitled “Semantic characteristics of perception verbs”, focuses on the main analysis of the semantic side of the studied predicates. The motivation and conventions for selecting synonymous sets with perceptual verbs from Wordnet are clear and convincing. I also find appropriate the comparison of the meanings with another source – the Dictionary of the Bulgarian Language. Logically, synsets are divided into five types of sensory perception, as well as those for general perception, taking into account the concept of

a hierarchy of lexicalization of sensory perceptions. The accepted classification criteria are perfectly applied to the selected verb synsets. Both the prototypical uses describing the true meaning of perception and the non-prototypical uses encompassing the extended (non-perceptual) semantics of verbs are very well described.

In the fifth chapter, “Verbal meanings and arguments”, the frame structure of the studied predicates is presented. The correlation of the data from Wordnet and Framenet provides a very good opportunity to analyze the semantic-syntactic structure of predicates and their selective constraints, which is the main goal of this chapter. Seven frames were analyzed, noting nuclear and non-nuclear frame elements.

The conclusion is a summary of the substantive chapters of the dissertation, as the more significant conclusions are presented briefly in the last two paragraphs. The described contributions well represent the significance of the dissertation. The dissertation is accompanied by eight publications on the topic, four of which are co-authored. The cited literature is rich and shows the good orientation of the doctoral student in modern linguistics, including important works of Bulgarian, Russian and Western scholars. The appendices provide information on the analyzed synsets, as well as a comparison of the interpretative definitions in the Dictionary of the Bulgarian Language and Wordnet.

The abstract correctly reflects the content of the dissertation.

In conclusion, I would like to express my excellent impression of the dissertation of Hristina Kukova, emphasizing the good organization of the work, which makes it readable and understandable, the good level of scientific style of the author and the analytical approach to research. The tables in the text and the appendices after it also contribute to the good presentation of the analyzed material. In general, I find the work mature and thorough, meeting all scientific standards for a doctoral dissertation. The minimum national requirements for the dissertation are also met.

Based on what has been said so far, I fully support the awarding of the educational and scientific degree “Doctor” to Hristina Kukova.

Sofia, May 5, 2022

Assoc. prof. Ekaterina Tarpomanova