

ALGORITHMIC SYNTAX IN 3D MAX FORMAT

Zhanar A. Nurshaikhova¹

Doctor of Philology, professor

¹ *Al-Farabi Kazakh National University, Almaty, Republic of Kazakhstan,
(39/47 Masanchi St., Almaty, Kazakhstan, 050038), e-mail: zhanara26n@mail.ru*

The main thesis of the theory of algorithmic syntax is the modeling of simple Russian sentences for the purpose of studying. We used computer animation for viewing a virtual sentence while demonstrating the steps of studying grammatical material.

Keywords: algorithmic syntax, virtual integral stemma.

Introduction. Some time ago Galileo Galilei said: “Measure what is measurable, and make measurable what is not so”. This quotation attracted many scientists from different spheres of knowledge. Noam Chomsky wrote in his book: “Why are there theories of generative grammar, if you do not use them to generate a grammatical system for teaching new grammar?” [2]. In turn, Lucien Tesnière proposed his idea of integrating unified model: “it’s possible to imagine some integral stemma in which all structural elements of the sentence would be considered. At least we can attempt to approach this ideal” [3].

The only thing remaining is to bring this idea to life considering empirically that there is no more illustrative method in the process of studying language than seeing the language system through the structural model of a sentence. And then to consider algorithmically the syntactic relations between parts of a sentence by constructing and studying all types of stemmas connecting the components.

The modeling of Russian sentences did not start with modeling the structure of the whole sentence but with the need to reduce the explanation of grammatical material and adapting its presentation to basics. Only simple models, which didn’t show words’ syntactical relations and sentence structure, were demonstrated. They included only schemes showing case endings.

These separated schemes needed to be connected with each other. There was a need to combine them in one completed system. As a result, in the beginning of 2000 we modeled Russian sentences according to the ideas of N. Chomsky and L. Tesnière.

However, N. Chomsky and his followers didn’t explicate their models and didn’t demonstrate syntactical relations between parts of the sentence. In turn, L. Tesnière with his followers didn’t combine hierarchically links and stemmas in a single model.

Our virtual integral stemma demonstrates the complete structural model of a sentence which is built with the help of models of sentence deep structure according to N. Chomsky and shows syntactic relations between parts of the sentence according to L. Tesnière demonstrating the whole system of case endings of the Russian language.

The purpose of algorithmic syntax theory is to help understand the symbolic structure of a sentence, and then develop each element of this structure using algorithms, to teach to combine separate fragments of integral stemma - mini stemma, which need to be consequently composed into expanding blocks.

The main idea of the theory of algorithmic language acquisition consists of the following: a student should begin the act of communication without studying unknown words for expanding his or her passive vocabulary but straightly using them while communicating. For this purpose we developed algorithms of teaching grammatical material. Our unique method offers a sequence of teaching and constructing all elements of the sentence.

Combining technologic processes and computer technologies is the innovation in the modern method. We tried to demonstrate it with the help of computer animation in 3D MAX format. For

strengthening the demonstration and real vision of a virtual sentence we animated the model of a Russian sentence using animation and showed step-by-step studying grammatical material on the computer screen. Therefore, animation strengthens the understanding the whole process of making sentence structure. The virtual stemma of a Russian sentence is integrated on the screen in the sequence offered by us. It can be illustratively seen while demonstrating the full animation which shows the sequential constructing of the whole structure of simple Russian sentence. You may study integrating a simple sentence step by step along with students in order to better acquire grammatical material and begin to communicate sooner.

Conclusion. The ideas of modeling Russian sentences and algorithmic demonstration of grammatical material provide the basis for the author's monograph, Russian language textbooks for foreigners, and educational programs for teaching Russian as a foreign language.

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