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**К БИО-КОГНИТИВНОМУ ОСМЫСЛЕНИЮ ГРАММАТИКИ**

Статья посвящена био-когнитивному подходу к понятию грамматики языка, ее освоению и явлениям грамматического значения, грамматических форм и конструкций. Излагая основные принципы традиционной концепции грамматики с диахронической точки зрения, автор раскрывает ее недостатки и описывает альтернативное видение грамматической системы с позиции био-когнитивных и семиотических исследований природы языка.

Адрес статьи: www.gramota.net/materials/2/2016/8-1/30.html

Источник

**Филологические науки. Вопросы теории и практики**


Адрес журнала: www.gramota.net/editions/2.html
Содержание данного номера журнала: www.gramota.net/materials/2/2016/8-1/

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The article is concerned with the bio-cognitive approach to the notion of language grammar, its acquisition and the phenomena of grammaticality, grammar forms and constructions. In setting out the basic principles of the traditional conception of grammar from a diachronic perspective, the author reveals its drawbacks and proceeds to describe the alternative vision of grammar within the scope of bio-cognitive and semiotics-related researches into the nature of language.

Key words and phrases: bio-cognitive approach; grammar acquisition; language; cognitive structure; grammatical construction.

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TOWARDS A BIO-COGNITIVE UNDERSTANDING OF GRAMMAR

First and foremost it should be noted that what constitutes the traditional vision of English grammar we are accustomed to is all about structures and their pragmatical meanings. These precepts are based on understanding language forms as structural elements which build up independently or are built up by some unknown (at least, not specified) force so as to acquire or change meanings. Moreover, some elements, the so-called auxiliaries, may play the role of 'pawns' losing their value and which mean nothing but functional assistance to some 'superior' units. Loosely speaking, such a conception of grammar is deeply rooted in the 'good old' time-tested Latinistic model of tenses which presumably was first introduced by Donatus and Priscian and adopted in William Lily's Rudimenta Grammatices (1534) [7]. It is in this very work that the formal-semantic criteria of defining English tenses are thought to have originated. Naturally, the theory underwent certain alterations and modernized transformations by Lily's successors (W. Bullokar, S. Greaves, C. Cooper and others) as it was motivated by the need to record these or those (minor) changes in the shaping of the English language itself (during the New English period). Still, as Ian Michael pointed out, 'most grammars of English published in Britain during the 19th century were dull <...> They were repetitive', and 'of all the subjects in the school curriculum English grammar was the most rigid and unchanging' [8, p. 11].

A tremendous influence on strengthening the enforcement of phrase structure approach to grammar was exercised by N. Chomsky who proposed an even more drastically mathematic view of syntax in his Aspects of the Theory of Syntax (1965) [5]. He represented language as a complex of patterned rule-bound structures 'susceptible' to transformations, thus generating 'infinite use of finite means'. This transformational structuring is alleged to underlie the deep mental mechanisms of distributing these or those semantic roles to each constituent element, which surfaces in language in the form of uniformed 'output' models [6]. Chomsky's theory gave rise to a computational and technical vision of linguaging where a human purports to be a system with genetically intrinsic grammar competence outputting it by way of computer-like modeling. In a more narrow context of ESL acquisition, the elaborated principles of constructionism and syntax parsing analysis took formalism in understanding grammar, grammatisation and grammaticality to extremes. In the eyes of a learner speech production is normally all about generating grammatically correct models and structures determined by government and binding principles within themselves (as in Chomsky's Minimalist Program and its schemes mapping the construction design of a phrase).

Suffice it to say that recent neurophysiological researches aimed at disclosing the relationship between a human's language and cognition (T. V. Chernigovskaya, N. P. Bekhtereva) made a good case that memory is far from a 'box and take them from' [1], therefore on the grounds of this experimentally tested scientific fact alone we can question the theory of piling up models, structures and meanings of words in our head so as to output them in a calculating fashion. In all probability, information processing is carried out differently.

The structure based approach to English grammar, primarily concerning its verbal system, in the course of the 20th century was enriched by alternative classifications and interpretations suggested by H. Sweet, O. Jespersen, A. S. West, T. Givon, H. Reichenbach, M. Bryant as well as Russian grammarians such as A. S. Smirnitsky, M. Y. Blokh, I. P. Ivanova, etc. Roughly speaking, many of them came across as different variations on the same theme with their own focus shifts to function, categorial meaning, historical and cross-linguistic perspective. Admittedly, one could find initial attempts to make cognitively oriented observations of the described language structures. In particular, Reichenbach's drawings with wavy and continuous (strange as it may seem, standing for non-continuous verb form) lines in them were intended to represent the speaker's visual perspective of progressive and simple actions, while the temporal axis of 'before now – now – after now' symbolized the speaker's positioning them in time.

Scientific endeavors to interpret grammar and its units have also been made by those researchers who concerned themselves with the study of meaning. A truly innovative look at grammatical semantics was proposed by A. Wierzbicka in her Semantics of Grammar (1988) [10]. The author came up with the idea of semantic primitives or 'verifiable semantic representations' universal in their cross-linguistic nature, and which can be applied to every word and so-called grammar construction in order to present their meaningful content. In essence, the scholar denies grammar as such in its conventional understanding because 'there is no such thing as grammatical meaning or lexical meaning, there are only lexical and grammatical MEANS of conveying meaning' [Ibidem, p. 8]. The theory of primes or key words sounds fresh and to its merit has been recognized and widely applied to semantic analysis especially in cross-linguistic study. What the conception might be lacking in is a more elaborated view of grammar as conventional cohesion and a product
of categorization. It seems ungrounded to judge would, for example, in English subjunctives as a means to express 'I imagine' and I don't want to say' overshadowing 'other would' like I told him but he wouldn't listen [4, p. 459].

The early stages of the evolution of cognitive linguistics saw quite a few landmark researches into the nature of grammar and its acquisition. R. Langacker's *Foundations of Cognitive Grammar* (1987) is to be mentioned first in this respect. The scholar presented a comprehensive overview of cognition related mechanisms accounting for the interdependent language competence and language performance. In this theory, grammar appears as a product of a language user's abstraction and schematisation of language use. It results in certain schemas that are thought to be abstract models derived from the observed usage of concrete instances [6, p. 10].

Much credit to R. Langacker, a number of crucial conceptual frameworks were introduced relating to the cognitive aspect of language grammar and grammatisation (e.g. symbolic assemblies, usage-based grammar acquisition). Still, the role of a human as a 'linguaging' person and the specifics of their cognizing faculties in the process of language acquisition seem to be underestimated.

The successive generation of cognitive linguists were largely preoccupied with a biological rethinking of language. Such naturalization (S. J. Cowley, J. Zlatev, A. V. Kravchenko) and bio-semantic approaches (A. A. Sharov, I. K. Arkhipov, S. A. Pesina) rooted in Maturana's *Biological of Cognition* brought about a revolutionary change of aims, objectives and subject-matter that should come into the focus of any linguistic research. The theory of observer, subject of perception and bio-socio-cultural language acquisition developed within this paradigm are meant to address the scientific problem of grammar in a different, schema- or structure-free way.

What seems to be of utmost importance here is that we leave behind the 'old good' formula dictating that grammar is a set of rules under which syntactic structures are built up. The matter is that if a language is ontologically a physiological ability of a human (which can hardly be denied by anybody), we must unavoidably speak of that very human first. More than that, there is no escaping the fact that it should become the focus of our attention because speech production, generation of sense and communication depend and cannot but depend on the producer, generator and communicator. It means that any attempt to unearth the linguistic truth from the researched subject-matter will invariably involve an anthropocentric approach according to which we take a subject-oriented view and look at things from the perspective of a 'language'.

This language is a subject who perceives the surrounding reality through sensory organs which enables them to receive necessary information from the outer world with an aim to biologically 'survive', i.e. adapt to it more effectively [3, p. 55]. This subject of perception by virtue of the innate higher nervous activity possesses cognition allowing this person both to perceive and conceive the reality as well as making possible the development of such a specific capacity as language. This capacity in turn is meant to greatly facilitate the process of adaptation and conception by opening up an opportunity to describe, represent or 'communicate' the formed mind images and concepts from the person's concept map of the world. Being also a member of a (social and cultural) language community, the person accordingly shapes their own language map of the world specific to this community. The latter is nothing short of a person's language competence as a body of knowledge they have to be sure that they can make themselves clear and describe the right mental image of what they have perceived and conceived to be adequately understood.

How does this shaping of 'maps' take place and how do we language what we think, that is how do we manage to grammatically 'make' our ideas into a language and even 'exchange' them with others? Since the very birth a human as a cognitive being begins to interact with his or her environing world reacting to the outer stimuli and making observations so that a certain pattern of behavior is settled to guarantee the safe survival. These interactions or their eventualities being valuable and vitally meaningful to the subject (e.g. hot water is painful) are remembered in the form of images and accumulate the subject's experience. It means that he or she can freely make use of this experience for reaching a positive result in every successive interaction which is more complex and intricate than the previous one. Such a growing network of experienced interactions coupled with the piling knowledge of them and their meaning are essential to the human's efficient adaptation to the environment and his or her survival in the long run.

The same goes for language. Since birth a human as a social being is immersed in the environment of language interactions as well. An elementary word uttered to a child with reference to an object or fragment of reality becomes a stimulus to react to and observe. The next utterance of this word in the same situation of reference causes the subject to remember this interaction and 'come to terms with' it (like hot water) and imbibe it as part of experience. In this way a word becomes meaningful, i.e. a child is able to associate the content (what was referred to in those preceding situations of utterance) with the form (the graphic and sound image of the word), understand and make use of this meaning in the future.

As the brain of a person becomes mature, this makes it possible for them to cognize more complicated notions and concepts as well as concurrently operate on the acquired units of linguistic experience to describe these 'conceptual complexes' (categories). The latter may be called so because they represent mental products of abstraction, the mechanism of a higher level of thinking when a subject comes to grasp not only the ideas of concrete objects around, but also the notions of intangible relations in time and space. Such a wide spectrum of relations cannot be expressed by a set of words only (our memory will probably fail to get hold of so many images of separate words to semantically accommodate the fluidity of ever-changing environment), they need to be specially organized and combined with each other. From this moment on a person learns to operate on words and forms by cognizing the same dynamic relations within the language environment (Cf: incoherent go – I – there – yesterday and coherent I went there yesterday). Thereby the subject establishes language routines, i.e. a settled practice of using certain words in ‘fixed combinations’ to express certain mental categories (she has played, he is playing not * she has playing or he is play). Importantly, words and forms in these combinations do not change or transform their meanings (becoming main or un-main verbs), they remain to be associated with what was once memorized as a meaningful content or image of their language form. In other words, an organized combination of forms (grammar construction)
used in discourse triggers a respective combination of images which begins to be mentally organized as well and understood as something more complex and structured (cognitive structure) [2, p. 212]. The given approach to grammar and its acquisition is felt to offer such a perspective of its phenomena and formal units that may facilitate our understanding and explaining it for many academic and non-academic purposes.

References