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WORD ORDER AND COGNITIVE ORGANIZATION OF SPEECH
ABSTRACT

This article explores the problem of the relation of word order to cognitive structures of speech, based on the theories of cognitive linguistics, psycholinguistics, and discourse analysis. It seeks to prove that word order does not only represent a formal aspect of syntax but is also determined by the basic cognitive mechanisms of language production and perception. Nowadays, linguistic studies tend to draw closer attention to the link between the process of syntactic structuring and mental processes.

The study discusses various linguistic theories of word order, which include functionalism, cognitive linguistics, and psycholinguistic models for sentence generation. Information structure, topic-comment structure, cognitive accessibility, and efficiency are specifically considered. The study illustrates that people construct their sentences based on certain rules of predictability and cognitive accessibility, putting important discourse elements at more accessible syntactic places. This way, understanding the message becomes easier, the speaker saves some cognitive capacity, and it makes the communication coherent.

Moreover, this paper examines the psycholinguistic insights into sentence planning, working memory, and incrementality.

The scientific novelty of the article resides in the integration of cognitive, functional, and discourse-based syntactic analysis approaches.

Key words: word order, cognitive linguistics, speech organization, information structure, psycholinguistics

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ПОРЯДОК СЛОВ И КОГНИТИВНАЯ ОРГАНИЗАЦИЯ РЕЧИ

Аннотация

В данной статье исследуется проблема связи порядка слов с когнитивными структурами речи на основе теорий когнитивной лингвистики, психолингвистики и дискурс-анализа. Цель исследования - доказать, что

порядок слов представляет собой не только формальный аспект синтаксиса, но и определяется основными когнитивными механизмами производства и восприятия языка. В настоящее время лингвистические исследования всё больше внимания уделяют связи между процессом синтаксического структурирования и психическими процессами.

В исследовании рассматриваются различные лингвистические теории порядка слов, включая функционализм, когнитивную лингвистику и психолингвистические модели построения предложений. Особое внимание уделяется информационной структуре, структуре «тема-комментарий», когнитивной доступности и эффективности. Исследование показывает, что люди строят свои предложения, основываясь на определённых правилах предсказуемости и когнитивной доступности, размещая важные элементы дискурса в более доступных синтаксических местах. Таким образом, понимание сообщения становится проще, говорящий экономит когнитивные ресурсы, и коммуникация становится связной.

Более того, в данной работе рассматриваются психолингвистические аспекты планирования предложений, рабочей памяти и инкрементальности.

Научная новизна статьи заключается в интеграции когнитивного, функционального и дискурсивного подходов к синтаксическому анализу.

Ключевые слова: порядок слов, когнитивная лингвистика, организация речи, информационная структура, психолингвистика

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SÖZ SIRASI VƏ NİTQİN KOQNİTİV TƏŞKİLİ

Xülasə

Bu məqalədə koqnitiv dilçilik, psixolinqvistika və diskurs təhlili nəzəriyyələrinə əsaslanaraq söz sırası ilə nitqin koqnitiv strukturları arasındakı əlaqə araşdırılır. Tədqiqatın məqsədi söz sırasının yalnız sintaksisin formal aspekti deyil, həm də dil istehsalı və qavrayışının fundamental koqnitiv mexanizmləri ilə müəyyən edildiyini nümayiş etdirməkdir. Hal-hazırda, dilçilik tədqiqatları getdikcə sintaktik strukturlaşdırma ilə zehni proseslər arasındakı əlaqəyə diqqət yetirir.

Tədqiqatda funksionalizm, koqnitiv dilçilik və cümlə quruluşunun psixolinqvistik modelləri də daxil olmaqla, söz sırasının müxtəlif linqvistik nəzəriyyələri araşdırılır. Xüsusilə informasiya strukturuna, mövzu-şərh strukturuna, koqnitiv əlçatanlığa və səmərəliliyə diqqət yetirilir. Tədqiqat göstərir ki, insanlar cümlələrini müəyyən proqnozlaşdırıla bilənlik və koqnitiv əlçatanlıq qaydalarına

əsasən qururlar və vacib diskurs elementlərini daha əlçatan sintaktik yerlərdə yerləşdirirlər. Bu, anlamı asanlaşdırır, koqnitiv resursları qoruyur və ünsiyyətdə ardıcılığı artırır.

Bundan əlavə, bu məqalədə cümlə planlaşdırmasının, iş yaddaşının və artımın psixolinqvisitik aspektləri araşdırılır.

Məqalənin elmi yeniliyi sintaktik təhlilə koqnitiv, funksional və diskurs yanaşmalarının inteqrasiyasındadır.

Açar sözlər: söz sırası, koqnitiv dilçilik, nitqin təşkili, informasiya strukturu, psixolinqvistika

Introduction

One of the most important tools for organizing meaning, structure, and communication in human language is the ordering of words within a linguistic message. While there are many variations in the syntactic structure used in various natural languages, it is characteristic of all natural languages to use a certain ordering system that facilitates the understanding of an utterance by its hearer. Word ordering does not only have a purely syntactic character. It is directly connected with the processes of perception, remembering, focusing attention, and managing information.

Theories of grammar were traditionally concerned with word order as a formal structural element. The earlier structuralist and generative models were mainly interested in syntactic laws that dictated the arrangement of sentences without taking into account the aspect of communication or cognition. Nevertheless, the further studies in cognitive and psycholinguistics, as well as in discourse analysis, proved that word order is related to the process of human information perception. In particular, Talmy Givón, Ellen Prince, Wallace Chafe, and Joan Bybee insisted on this point of view.

The connection between word order and cognition is made apparent when examining how speakers construct information within the discourse. Human communication entails speakers to discriminate between what they already know and what is unknown, keep topics consistent, emphasize specific elements, and make processing easier for listeners. Word order serves as an indicator of these cognitive concerns, as in many cases, word order is structured according to their priority. Many languages precede old/new or known information with new/focused information as a way of making it easier for both the speaker and listener to understand [2]. Cognitive accessibility is another factor that is considered when constructing sentences.

The findings of psycholinguistics have shown that word order is affected by processing efficiency as well. Research in sentence construction indicates that animate objects, concrete objects, or semantically prominent objects are more prone

to occupying subject slots and coming early in an utterance [6]. Additionally, phonology and prosody can work together with syntax in language formulation [4].

Word order cognition importance is clearly seen in the organization of the discourse. Not only is communication dependent on grammar rules, but it is also important to have coherent communication where information flow makes sense to the listener. In terms of Prince, information structure involves differentiation between new information and old one, and languages use different syntactic orders for encoding such information [7].

This paper considers the syntactic order and its correlation with the cognitive processes that go behind language comprehension, production, memory, attention, and language organization. Additionally, the psycholinguistic and functional aspects of word order are considered with emphasis on information structure and processing factors in sentence organization.

Research

Word order studies have come a long way in the past one hundred years. Earlier linguistic models considered syntax as an autonomous system of its own, whose organization and operations were determined by the syntactic rules of language. Structural linguists studied sentence structure based on distribution and morphology, whereas generative models focused on innate syntactic structures and transformations. Despite the valuable contribution made by such models to understanding sentence structure, they tended to ignore the cognitive and communicative aspects of word order determination.

Talmy Givón, for instance, suggested that word order was a function of pragmatics like predictability, attention, and communicative relevance. In this regard, syntax does not have an existence separate from human cognition and rather derives from the communicative strategies developed as a result of human cognitive constraints [2].

Information structure is among the key ideas involved in the study of cognitive approach to word order. Prince noted that speakers arranged information into given, new, and inferable information, and did so depending on what was known by the listeners. Given information is usually placed early in the sentence since it is more easily accessible, whereas new information appears at a later stage of discourse [7].

The use of topic-comment structure is yet another significant dimension in cognitive construction of speech. Topics act as the anchors which help link new expressions to pre-existing representations of discourse knowledge. According to Givón, topical referents act as “file labels for mental files in episodic memory.” As a result, word order becomes a very important element in bringing attention to the correct referents [3].

The field of psycholinguistics gives clear empirical proof that sentence generation is affected by mental accessibility. Speakers usually refer to those objects

whose mental accessibility is high at the beginning of utterances. Mental accessibility can be determined according to several factors, such as animacy, definiteness, frequency, visibility, or previous discussion. McDonald, Bock, and Kelly proved that the use of animate nouns as subjects is frequent since animate entities play a prominent role in human perception of events [6].

In processing sentences, the listener analyses the sentence as he hears it progressively. The word order will thus determine the manner in which a sentence will be analysed. Languages with a stable word order have a strong syntactic clue that aids in sentence analysis whereas languages with an unfixed word order mainly depend on morphology and prosody. Processing studies in inflectional languages have found out that word order effects become prominent where morphological clues are ambiguous [8].

The other dimension of the cognition of speech organization relates to prosody and phonology. The structure of the sentence is not only governed by its syntax and semantics but can be affected by phonological rhythms and prosody too. Bernard and Gervain found that prosodic factors have an impact on the perception of syntactic boundaries in sentences and on structural relations in sentences [1]. Prosodically prominent elements often correlate with the most important information.

Likewise, the interplay between grammatical and phonological aspects in speech production has been studied by Janssen and Caramazza [4]. They found that phonological features can affect grammatical coding while constructing an utterance. This research provides evidence against modularity theories of language processing and lends support to interactive approaches, where different levels of linguistic representation work together.

Cross-linguistic data shows that cognitive factors play an important role in the syntax of different languages belonging to different language families. Despite the typological differences between languages, many share some common tendencies with regard to topicality, animacy, and availability. For instance, topic prominence is found in languages ranging from Japanese, English, Turkish, to Mandarin Chinese.

Computational linguistics has made some recent contributions to understanding the underlying psychology behind word order. Statistical patterns observed in the arrangement of constituents in machine learning models indicate that such arrangements maximize communication efficiency. Though computational models do not accurately model the cognitive processes of humans, these models show that recurring patterns of arrangement enhance efficiency through prediction and effective information distribution. Studies in the field of natural language processing have further shown that keeping word order makes for better semantics [5].

On the other hand, contemporary views also reject deterministic accounts of syntactic structures. The ordering of words is affected by several interacting influences, such as grammar, pragmatics, cognition, phonology, culture, and

communication context. No single factor determines syntactic structures; rather, they arise from the interaction between cognitive considerations and communicative goals.

One major topic for exploration is the connection between speech and thought. While some claim that syntax reflects conceptual structure, others believe that there is a connection between cognition and language in the form of attention, memory, and categorization, due to syntactic patterns becoming habitualized.

Studies on how children learn to speak indicate additional evidence for the cognitive nature of word order. The way children pick up word orders is a gradual process involving interactions and exposure. Children's early utterances may contain more cognitively accessible elements that convey semantic information than syntactically correct constructions. According to research on language acquisition, children initially depend on conceptual markers like agency and animacy to communicate.

When it comes to bilingualism and second-language learning, differences in word order between languages may pose a challenge to learners. Bilinguals can find themselves transferring syntactic patterns from their native language when learning a second language due to the habitual nature of word order in their cognitive processing.

Scientific Novelty

The scientific innovation of the current study is that it combines all three aspects in regard to word order in the study of the link between word order and cognitive organization of speech. Previous studies have tended to focus on one of the aspects in question without paying attention to the other ones. This article proves that word order should be viewed as a multi-dimensional means of cognitive organization.

The new contribution to linguistics contained in this research lies in the fact that it considers the correlation between the information structure and mental processes. It becomes evident from this article that the syntactic arrangement reflects the cognitive availability, the focus of attention, and the organization of memory at once. By combining the discourse functional and psycholinguistic approaches, the author proves that the structure of constituents arises as a result of interaction between communicative intentions and psychological limitations.

In addition, the paper highlights the importance of accessibility and predictability in organizing speech. Constituent ordering is described as an efficient technique to minimize the amount of information that must be processed by speakers and hearers. This perspective provides an alternative explanation of the functional theories of language that accounts for modern processing constraints.

Conclusion

The interaction between word order and the cognitive structuring of speech is arguably the most crucial aspect in current linguistics. This study proves that syntactic ordering is not merely a grammatical feature but rather reflects the cognitive processes underlying human communication. Word order determines the organization of speech and provides for efficient communication between interlocutors by organizing discourse, guiding attention, and memory, among other things.

This analysis has revealed that cognitive accessibility has a great effect on sentence structure. Speakers prefer to locate topics, animate entities, predictable objects, and semantically prominent items at the beginning of sentences because such an order simplifies the process of communication. Information structure, including such categories as "given" and "new" information, is of crucial importance in constituting the constituent order.

This study highlights the necessity of interdisciplinary research in syntax. Cognitive linguistics, psycholinguistics, neurolinguistics, and computational modeling, among other fields, all help explain how linguistic systems arise from human cognition. These views oppose formal theories of grammar, as well as demonstrate adaptability of language.

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