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**Nadia Yesypenko**  
(Chernivtsi)

### LANGUAGE AS ONE OF THE COGNITIVE FACULTIES

*У статті розглядаються питання ролі мови в когнітивній діяльності людини. Визначаються елементи когнітивних здібностей та аналізується зв'язок мови й мислення. Ілюструється значущість лінгвальних структур у репрезентації ментальних феноменів.*

**Ключові слова:** когніція, мова, лінгвістична структура, комунікація, концептуалізація, перцепція

*В статье рассматриваются вопросы роли языка в когнитивной деятельности человека. Определяются элементы когнитивных способностей, анализируется связь языка и мышления. Иллюстрируется значимость лингвальных структур в репрезентации ментальных феноменов.*

**Ключевые слова:** когниция, язык, лингвистическая структура, коммуникация, концептуализация, перцепция

*This article addresses issues of human's cognition and language as its element. Some ideas on human's cognitive capacities have been brought together to consider the nature and role of cognition. They address the question of what part, if any, language (linguistic structures) should play in the analysis of cognitive faculties. The question of the relation of language and thought has been a central one in cognitive and developmental psychology for more than thirty years. In the article the focus is on language as the means of communication as it is traditionally understood and more specifically, on language as the means of human's thinking reflection. The language is viewed not just as an abstract set of words, meanings, or a system of contrasts as it has usually been conceived, but as an element of cognition, as a practical, social activity, located in settings, occurring between people, used in practices. This approach has significant implications for the way*

*traditional issues of cognition are treated. Language and cognition have been brought together only rarely in the past and often for particular purposes local to one discipline.*

**Key words:** *cognition, language, linguistic structure, communication, conceptualization, perception*

Language holds a special place in cognitive science. It is paramount among the capacities that characterize humans. By understanding language, people understand something about themselves. Most scientists raise a fundamental question about connection between language and cognition, and then try to answer it by close examining of some detail of language use and design or interpretation of linguistic structures (A. Wierzbicka, R. Langacker, G. Lakoff). Some of them stress that language is one of natural components of human cognition. Among cognitive faculties people typically recognize competence in the areas of language, visual perception, and thinking (J. Pustejovsky, J. Taylor, D. L. Medin, E. J. Shoben).

In this article we **aim** to show how language (linguistic structures), and thinking, reasoning and understanding as effortless and unconscious activities introduce the fundamental conceptual questions of human communication system. The **tasks** undertaken in the article are the following: describe the components of human's cognition; analyze cognitive and functional characteristics of language; illustrate the role of an utterance in the communication process in particular and cognition in general.

Cognitive science is now a broad and heterogeneous intellectual field cutting across the disciplines of psychology, computer studies, anthropology, linguistics, neuroscience and philosophy. Human cognition is a complicated phenomenon. It is still not obvious how to divide it up into separate components. Language as an element of cognition is at the same time a means of communication. In a commonplace communicative situation numerous human cognitive capacities are implicated, each interwoven with the others. Linguistic ability is exercised in formulating and understanding sentences; auditory perception is involved in interpreting the speech produced by each participant of the communication process. Visual perception is implicated both in registering the reaction caused by an utterance (in the form of smiling, head shaking, brow frowning) and in reading features of the speech signal from the lips of the speaker. Motor control is presupposed in

the act of talking, since each articulator in the mouth and throat must be sent into motion at just the right moment in order to create a desired speech sound. Finally, an underlying process of thinking and reasoning controls selection and interpretation of the utterances produced. Thinking and reasoning embrace a number of cognitive capacities: remembering of old information and integrating new information, planning a course of action and anticipating its consequences [2].

Cognitive competence is usually investigated at three levels of analysis:

- 1) implementation,
- 2) representation and algorithm,
- 3) computation [8, p. 12].

In the case of language as a component of cognition, the level of implementation corresponds to neurological analysis of the structures and connections in the brain that underlie the use of language. The level of representation and algorithm focuses on the processing of information by the system and on the format of linguistic knowledge which is stored in memory. It is this level that cognitive scientists attempt to describe the information flow required by language use, in other words, the successive or simultaneous psychological steps necessary to interpret or produce speech. At the level of computation, language is analyzed grammatically and its structural properties are exposed. Knowledge of the grammar of a language informs us about the kind of algorithm needed to recognize and understand sentences. Grammatical knowledge constrains hypotheses about the information processing that underlies language use, since a theory of information processing must be consistent with the grammatical properties of language [4, p. 36].

Keeping in mind, that language is an element of cognition we should not neglect its main function: language is for communication. Let us analyze cognitive and functional characteristics of language. Here is a part of a conversation between two heroes in the novel "THE SUN ALSO RISES" by Ernest Hemingway. In the dialogue we can distinguish various types of communicative act, or illocutionary act, by which people communicate with each other: making statements, asking questions, giving directives with the aim of getting the hearer to carry out some action.

Question	"Hello, Robert," I said. "Did you come in to cheer me up?"
Offer	"Would you like to go to South America, Jake?" he asked
Statement	"No."

Question	“Why not?”
Statement	“I don’t know. I never wanted to go. Too expensive. You can see all the South Americans you want in Paris anyway.”
Statement	“They’re not the real South Americans.”
Exclamation	“They look awfully real to me!” I had a boat train to catch with a week’s mail stories, and only half of them written.
Question	“Do you know any dirt?” I asked.
Statement	“No.”
Question	“None of your exalted connections getting divorces?”
Offer	“No; listen, Jake. If I handled both our expenses, would you go to South America with me?”
Question	“Why me?”
Promise	“You can talk Spanish. And it would be more fun with two of us.”
Statement	“No,” I said, “I like this town and I go to Spain in the summertime.”

In a communicative exchange between a speaker and hearer such as this, there are two basic kinds of speech roles: that of giving and that of demanding. The thing given or demanded may be essentially something linguistic, such as information, an opinion (*Did you come in to cheer me up?*) or it may be something non-linguistic, some type of ‘goods or services, such as lending money (*If I handled both our expenses, would you go to South America with me?*). The kind of meaning expressed by the categories outlined here is interpersonal meaning which is influenced by the speaker and hearer’s experience of life and the world at large, that is the doings and happenings in which a speaker and hearer are involved or which affect them.

The happening and ideas touched upon in the dialogue are expressed through language as a state of affairs. Used in this way, the term “state of affairs” refers to extralinguistic reality which exists in the real world, and to the speaker’s conceptualization of it. Here language as an element of cognition comes at play. The components of this conceptualization of reality are semantic roles or functions. A general classification of them is the following:

1. process: that is actions, events, states, types of behaviour;
2. participants: that is entities of all kinds (animate and inanimate, concrete and abstract), that are involved in the process;
3. attributes: that is qualities and characteristics of the participants;
4. circumstances: that is any kind of contingent fact or subsidiary situation which is associated with the process or the main situation.

The following example from the text shows one possible configuration of the certain semantic roles:

<i>I</i>	<i>go</i>	<i>to Spain</i>	<i>in the summer</i>
participant	process	circumstance	circumstance

The kind of meaning expressed in these elements of semantic structure is experiential meaning or meaning that has to do with the content of the message.

The basic unit for the expression of interpersonal and experiential meanings is the independent clause, which is an equivalent to the traditional simple sentence. There is also a third type of component, the textual one. It enables the experiential and interpersonal components to cohere as a message, not simply as a sentence in isolation, but in relation to what precedes it in the linguistic co-text. Each kind of meaning is expressed by its own structures. The three types of structure combining to produce one single realization in words. To summarize, the three kinds of meaning and structure derive from the consideration of a clause are: the linguistic representation of the speakers' experience of the world; a communicative exchange between persons; an organized message or text.

The experiential meaning of the clause is realized through the transitivity structures, which elements of structure or functions include: agent, recipient, affected, process, attribute and circumstances. Some of these make up the semantic structure of the following example:

<i>Robert</i>	<i>will give</i>	<i>Jake</i>	<i>money</i>	<i>for the trip to South America</i>
agent	process	recipient	affected	circumstance

With the process of 'doing' such an action of giving, the agent is that participant which carries out the action referred to by the verb; the recipient is that participant to whom the action is directed and who receives the "goods / information" expressed as the affected. Circumstances attending the process are classified as locative, temporal, conditional, concessive, causal, resultant and others.

When a speaker interacts with others to exchange information or to influence their behaviour he/she adopts a certain role, such as a questioner and in doing so, assigns a complementary role, such as an informant to his/her addressee. Unless the conversation is very one-

sided, the roles of a questioner and informant tend to alternate between the interlocutors engaged in a conversation, as can be seen in the exchange of speech roles between Robert and Jake in the extract taken from the novel.

The syntactic structure of an utterance bears its cognitive feature as well. The clause is the major grammatical unit used by speakers to ask questions, make statements and issue directives. The exchange of information is typically carried out by the indicative mood, as opposed to directives, which are typically expressed by the imperative. Within the indicative, making a statement is associated with the declarative, and asking a question with the interrogative. More exactly, it is one part of these structures which can be called ‘mood element’, which carries the syntactic burden of the exchange. The rest of the clause remains unchanged, and can therefore be called the ‘residue’. Lets analyze two examples:

Declarative

<i>And it</i>	<i>would</i>	<i>be more fun with two of us</i>
subject	finite	residue
Mood element		

Interrogative

<i>Did</i>	<i>you</i>	<i>come in to cheer me up?</i>
finite	subject	residue
Mood element		

It can be seen that the mood structures are characterized by the presence or absence of a subject element and by the relative positions the subject and the finite. The finite is that element which relates the content of the clause to the speech event. It does this by specifying a time reference through tense, or by expressing an attitude of a speaker through modality. The finite element is realized in the examples above by the modal auxiliary ‘would’ and ‘did’.

One can organize the informational content of the clause so as to establish whatever point of departure is desired for the message. This is called the ‘theme’, which in English coincides with the initial element of the clause. The rest of the clause is called the ‘rheme’:

<i>Robert</i>	<i>will give</i>	<i>Jake</i>	<i>money</i>	<i>for the trip to South America</i>
theme	rheme			

The ‘theme’ may coincide with one of the participants as in this example.

The tripartite nature of English clauses can be generalized from a functional point of view. Predicator, indirect and direct objects and adjunct are included as clause elements which fall within the residue:

	<i>Robert</i>	<i>will give</i>	<i>Jake</i>	<i>money</i>	<i>for the trip to South America</i>
experiential	agent	process	recipient	affected	circumstance
interpersonal	subject	finite+predicator	indirect object	direct object	adjunct
textual	theme	rheme			

In a typical declarative clause such as this, agent, subject and theme coincide and are realized in one wording, in this case *Robert*.

We make up a conclusion that sentence comprehension involves reasoning and the construction of particularized and elaborated mental representations. Thinking is reflected in linguistic structures. Mental representations (concepts) are embodied by lexical means (words). A. Ortony considers that a concept is generally more detailed than the words in the utterance might appear to entail, that words only loosely constrain the concept and that one’s store of knowledge about the word and analysis of context are heavily implicated in sentence comprehension and memory [7, p. 167]. The speaker is performing a particular cognitive task that involves a word search. Languages differ not only in their grammatical structure and in the precise repertoire of obligatoriness distinctions speakers must make in each utterance, but also in the range of lexical choices available (the lexicon maps onto each conceptual domain) and which range of conceptual perspectives speakers can therefore make use of. Language, then, becomes an aid to thinking and can enable our own memories and ideas to be captured.

**Our further research** will focus on the possible incorporation of domain-based information into semantic representations. We will try to investigate if all facets of domain-based knowledge are equally central to a word’s meaning.

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