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СОДЕРЖАНИЕ

ЛОГИЧЕСКИЙ ПРЕДИКАТ
И ЕГО РОЛЬ В СТРУКТУРЕ МОДУСА

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Вопросы, связанные с выявлением природы предиката и классификацией предикатов с логико-лингвистических позиций, до сих пор остаются в фокусе внимания лингвистов. Автор статьи анализирует логическую природу предиката, представляет классификацию предикатов с точки зрения логических отношений в языке, исследует роль модуса в структуре предложения.

Исследование выполнено на материале сложноподчиненного предложения, представляющего собой сложное суждение, расчлененное на модус и диктум и в отчетливой форме демонстрирующее взаимосвязь и взаимодействие когнитивного, семантического и синтаксического аспектов.

Ключевые слова: модус; диктум; пропозиция; логико-семантическая структура предиката; философия языка.

LOGICAL PREDICATE
AND ITS ROLE IN THE MODUS STRUCTURE

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The question of the predicate nature in the judgment from the logical-linguistic viewpoint has been dealt with in the investigations of many linguists. Although a number of issues have been analyzed and discussed much, there is no common consideration and no accurate classification of predicate types yet.

This paper is an attempt to establish predicate nature and predicate classification and its role in the modus structure of the sentence. To understand the predicate nature better it should be considered a compound sentence, which manifests itself in its division into modus and dictum. This results in a new prospect of reconsideration of the cognitive, semantic, and syntactic aspects of the compound sentence.

Key words: modus; dictum; proposition; logic-semantic structure of the predicate; philosophy of language.

Logical predicate: structure, meaning and propositional value

Decomposition of a judgment into logic portions is based on cognition dialectics. The cognition process frequently requires identifying of causal relationships and refining or expanding the volume of information. This inevitably leads to decomposition of the judgment content into portions joined by subordinate connections.

The grammar structure of hypotaxis determines certain relationships between individual components of the entire form.

"If we start the sentence with the any subordinate conjunctions, e.g. *when, while, after* etc., so in the end of the subordinate clause we can suddenly stop to think over how the pattern can be continued. Thereby it is not only the substantial necessary continuing, but the grammatical exception of the principal clause. In all these cases we always or almost always realize in passing said, not attracting attention, something separate, which can act as the mediator between thoughts and words — this is the knowledge of the pattern form and interdependence of its clauses, something, that can be titled as the immediate expression of the living in us grammar rules" [12, 84].

In other words, sentences with subordinate connections should be singled out of the diversity of language means, which are capable of representing the genesis of basic logical concepts, since the specific character of their grammatical structure consists in dismemberment of the judgment and identification of causative and other relationships between the components of a compound sentence (CS).

It turns out that a feature of a compound sentence is its logical discreteness, which manifests itself in its division into modus and dictum. This results in a new prospect of reconsideration of the cognitive, semantic, and syntactic aspects of the compound sentence.

The topicality of the modus-dictum theory can be attributed to the fact that CS dismemberment has a certain impact on the problem of statement formation. According to the CS structure principles, a modus-dictum construction (MDC) is formed, which has all typical differentiating signs of logical, semantic, and structural completeness, specifically: predicativity, modality, communicative direction, and intonational, semantic and syntactical completeness.

The semantic-syntactic structure realizes the plane of the connection between the sentence and reality and, simultaneously, specifies the plane of the connection with cognition.

Such dense interrelationship is inherent in the minimal structure of judgment. In this case, it is important to note that since the judgment structure is superimposed on the sentence structure, one should advance from the sentence structure towards the logical judgment nature, rather than from the logical structure towards the structure of the sentence. The subject-predicate structure is accepted as universal for all languages, since it specifies various logical variants of the underlying propositional functions [22, 38].

"A propositional function, in fact, is an expression containing one or more undetermined constituents, such that, when values are assigned to these constituents, the expression becomes a proposition; in other words, it is a function whose values are propositions" [52, 156].

Already in Aristotle's cognitive concept, meaning is expressed via representation of an $S + P$ sentence, where P is the predicate taking up the central place in the structure, as a rule, and S is the noun or its substitute. Such a formula indicates the possibility of using it to form not only a sentence, but an utterance as well [48, 93].

The subject-predicate structure represents a speech-type mechanism based on logical dependences. Here, the logical coherence of the subject and predicate is expressed by the logical formula of notion [f(x)], relation [xRy], and judgment [f(a)]. "The subject and the predicate are included into the structure to be directed towards each other" [1, 42].

Within the framework of the logic-semantical approach, the predicate is the determinant due to the semantics of its content, since its inherent feature is the expression of relations, whose classical realization is the relation of determination.

In this work, the logical predicate is considered as a proposition with its inherent functions, which is understood as a phenomenon having the grammatical form of a sentence. In the sphere of logic universals, the propositional function is specified by the formula $f(x)$, where f is a constant and x is an independent variable. In the case where the variables are replaced by the constants, the propositional function becomes a sentence [37, 72].

C.J. Fillmore considers proposition as "a tenseless set of relationships involving verbs and nouns (and embedded sentences, if there are any), separated from what might be called the 'modality' constituent. This latter will include such modalities on the sentence-as-a-whole as negation, tense, mood, and aspect" [25, 23].

A proposition consists of a verbal nucleus with adjacent positions, which are filled by equal terms or arguments being semantically elementary units and should be neglected in further analysis [8; 13; 16; 20; 33; 53].

According to the Frege-Russell theory, any expression can be subdivided to a functor and arguments, the functor being the function sign and the argumentator, the name of the argument. The accepted basic categories are the category of the proper name and the category of utterances [27; 52].

The category of language expression can be specified as follows: index n will mean the category of the proper name and index S will mean the category of the sentence. The category of the functors will be expressed as $\dfrac{\alpha_1}{\beta_1 ... \beta_2}$. Here, the numerator is the index of the entire expression, and

the denominator contains the categories of arguments, since propositional connections $\dfrac{S}{nn}$ are most frequently accepted [2].

In other words, the proposition is that very object, which the propositional attitudes, i.e., modus predicates, deal with.

"The essence of the predicate lies in denotation and evaluation of static properties and dynamic manifestations of real objects and their interrelationships. Values are differentiated, and the conceptual system is refined in the predicate domain" [8, 34−37]. In this connection, the predicate can serve as the basis for the logic-linguistic concept of the modus.

The entire body of predicates can be arranged in the following 10 basic logic-semantic kinds in accordance with the dominant lexical components [40]:

(1) existential, (2) actional, (3) deliberative, (4) perceptive, (5) qualitative, (6) state, (7) locative, (8) temporal, (9) identifying, and (10) classifying.

Logical dependences ascertain the dependence of elements A, B, C, etc., which are present in the speech chain, on the predicate. Due to its connection, a kind of the minimal structure is formed, i.e., the smallest unit which can carry the sentence meaning. The process of sentence construction corresponds to the situation and communicative intention of the speaker, as well as with the logical determination, which expresses the relationship between reality, perception, and language.

"But since these predicates merely presuppose this awareness, rather than profiling it, they are not essentially epistemic in nature. Moreover, the 'knowledge' and affect in question pertain to the event itself, not to a full-fledged proposition (event cum epistemic stance) concerning it. This is the crucial feature distinguishing complementation at the effective and epistemic levels" [39, 189]. Distributive relationships, which are formed under the influence of the valency combinability, are formal reflections of the predicate's semantic entities and arguments [29, 41]. The logic valency reveals extralinguistic relationships between the functor and arguments on the basis of logical analysis of the dependences between reality objects. Application of the logical-valency principle allows one to single out the information content of the utterance, which is a unity from the viewpoint of logics.

Structurization of such a logical unity makes it possible to reveal the mechanism of logical connections between the utterance components. An indication of the logical organization of an utterance is the development of its structure obeying the principle of the logic order of its components, such that each next component combines with the previous one. A disruption of the logic combinability within the framework of an utterance leads to alogism of the latter. While reasoning, the mitent is all the time aware about the contents of the premises and combines them in accordance with

this content. Logic valency allows one to predict the choice of the consequent argument in the utterance.

At the same time, logic valency makes it possible to state that the logical predicate has not only actual arguments, but also potential arguments as well, which are not always reflected in the language. In F. Schmidt's opinion, "grammatisch entspricht aber dem Argument das aktuale oder potentiale Subjekt, dem Funktor das aktuale oder potentiale Prädikat, und hier im Sprachlichen bestimmt umgekehrt das Subjekt das Prädikat hinsichtlich seiner grammatischen Form. Oder kurz: Das logisch bestimmende ist das grammatisch bestimmte und das grammatisch bestimmende das logisch bestimmte Wort" [54, 25]. The similar opinion E. Rosch expresses: "Two general and basic principles are proposed for the formation of categories: The first has to do with the function of category systems and asserts that the task of category systems is to provide maximum of information with the least cognitive effort; the second has to do with the structure of the information so provided and asserts that the perceived world comes as structured information rather than as arbitrary or unpredictable attributes. Thus maximum information with least cognitive effort is achieved if categories map the perceived world structure as closely as possible" [51, 28].

The syntactic category representing the predicate and, at the same time, being a way to express the predicate is the verb, which is not used out of the predicate. In this sense, the predicate is monofunctional.

The verb is the sentence nucleus and serves for expression of various categorical meanings. However, the main factor here is that the verb is used to assign a feature to the subject, specifically, an action, a quality, or a state. The verb is the carrier and exponent of modality, since, "whereas the forms of the present, future, or past tenses considered out of a sentence do not express any relation to the speech moment and, therefore, do not form a speech act, the forms of the present, future, or past tenses within the sentence constituency are a speech formation means during the very process of its making, thus being the organizing center of a sentence in the modal plane" [50, 206].

The modus structure without a *verbum finitum*, which undertakes to implement all basic syntactic functions, is hardly thinkable. Therefore, these functions turn to be inherent not only in the modus structure, but in the CS as a whole, since the category of modality, which overlaps with the category of predicativity, is wider than the category of mood, and one of its most important features if categorization of the meaning, i.e., differentiating between real and hypothetical modalities [26, 8].

The verb as a syntactic category relays the content of both the predicate and the subject via its grammatical form, i.e., it is the grammatical form which becomes a carrier of the logical content. H. Brinkmann notes that in a sentence, the *verbum finitum* "is capable of relaying the meanings

of the beginning, continuation, process, result, and the end" and "relays the attitude to the forthcoming information via its form" [11, 308].

Here, a rather important statement should be added: the common concept when interpreting a verb is to base the interpretation on its modal-temporal characteristic, whereas in the logical analysis of the language, main stress is laid on the logical meaning [47, 87]. It is the verb that has those logical properties, which correlate with the logical organization of the sentence, i.e., emphasize those semantic components which correspond to the logical predication.

Logical predicate in the semantic structure of the modus

"In general, cross-linguistic identification cannot be accomplished on purely formal (structural) grounds for two reasons. First, variation across languages is too great. Second, formal definitions are internal to the structural system of a single language. For these reasons, typologists generally use definitions that are 'external' to the linguistic system that is semantic, pragmatic or discourse-based definitions" [19, 88].

A most important role in studying the organization of the sentence, which constitutes the thought / judgment structure, is played by organization of specific language forms and identification of the meanings of predicates and subjects in various sentence patterns. The meaning of the predicates and subjects determines which different structural types sentences belong to [60, 24].

Any judgment is based on a certain type of logical relationships, which reflect the state of things, facts, and subject relations. Within the language system, the logical criterion determines the capability of language means to reproduce thought, since, on the one hand, it is possible to discern sense relations only on the basis of logical thinking which reflects actual objects and, on the other hand, logics underpins the actual practical and language communication. Logical operations are interpreted via deterministic notions at the language level in accordance with thinking norms and grammatical arrangement in concept structure, first of all, in the meaning structure.

Syntactic constituent structure rules do not produce the deep logical structures and transformations never result in changes of the meaning of a sentence. Furthermore, since this deep structure is purely semantic, and the predicate semantics appears to be a clever means for describing paraphrase and ambiguity: both for syntax and for lexical items.

The structure of the sentence meaning is a unit of semantical sentence modeling, since this is an invariant of structurization of the sentence meaning, this serves to transform speech into utterance [44, 33]. Analysis of the meaningful, semantic, and syntactic structure of the sentence and its components is essentially researching into the processes of understanding and producing of speech and, therefore, studying the process of real world, in its turn.

Since logic has always been inherent in organization of rational consciousness, then it seems possible to explain the structure and functioning of language units on the basis of universal logics categories.

The interconnectedness of logical universals, their language representation and realization at the speech level, which determines the logic-valent and logic-distributive qualifications of a CS, is quite evident. This correlation is where the prospect of reconsideration of the meaningful, semantic, and syntactical CS aspects arises allowing for the identified logical discreteness of the CS, which manifests itself in the CS division into the modus and dictum.

The logical CS structure can be studied by revealing the lexical-semantical instantiation of the predicate. The predicate is a special language entity which typifies the language in the form of structural sentence schemes, rather than in the form of words of the language [24].

The issue of predicate division is widely discussed in literature, where functional peculiarities of predicates are specified for different languages. The following classifications should be seen as most common ones:
• with respect to aspect features: predicative / unpredicative and sentential / unsentential [13; 18; 58];
• with respect to quantitative valency: absolute / relative [23; 57];
• with respect to qualitative valency: based / unbased [21; 35];
• with respect to role valency: agentive / disagentive [14; 47];
• with respect to semantics: physical and psychical effect [30, 9];
• with respect to the syntactic function: matrix / immatrix [15; 28; 42];
• with respect to the functional-semantic character: being functional — semantic autosemantic / synsemantic, full / empty [20; 36; 46].

Analysis of the above classifications demonstrates that when the predicate typology was developed, some individual attribute was used as the main aspect to determine predicates' properties. At the same time, in order to reveal the status of a CS or MDC, which organizes the CS in logical semantics, it would be necessary either to accept the entire scale of predicate classification, or to emphasize one of the specified parameters. However, these efforts do not result in isolation of a single universal criterion, which could be used to specify the semantic-syntactic structure of the modus and the entire CS. Therefore, one can assume that the predicate classification should be based on a logical criterion. From the viewpoint of logical relationships, the "predicate is the source of the thought's motion in the judgment, its driving force" [3, 171]. In modern logical analysis of the language, the predicate is seen as an 'indexal' expression, which serves to interpret the sense of a sentence [34, 4; 41; 43; 49; 57].

The issue of functioning of a special group of constituents, which represent a sentence, within a sentence is also dealt with by R.A. Ivanova.

These constituents are considered by her as *lexical-grammatical indexes* (LGI) which participate in sentence modeling [31].

The problem of identification of the internal LGI organization is connected directly with the complexity and diversity of the senses that participate in MDC formation: while potentially, the amount of words expressing these senses (i.e., doubt, lack of knowledge, negation, possibility, impossibility, annoyance, etc.), LGI have the properties of appraisal-modal qualification, sense accentuation, addition, prediction, reactions, negation or confirmation of facts of their adjustment on the side of the authors of the speech act.

Logical-semantic relationships, which are the result of the transformation of notional categories to the linguistic semantic functions, occupy the leading place in the semantic CS structure. In this context, LGI act as the logical code to the entire semantic structure of the CS.

At the same time, the linguistic expression of the logical structure is based, first of all, on the aspects of logical meanings. The logical meanings, which demonstrate their properties via functional-semantical categories, include entitivity, agentivity, causativity, subject qualification, processeality, instrumentality, etc. [45, 26]. The general meaning of the modus, which is formed on the basis of logical meanings, affects, in its turn, the influence on the structurization of the entire internal logic potential of the CS.

From the logical viewpoint, the modus structure is formed by the predicate. Therefore, its syntactical organization, as a rule, proves to be completed, whereas on the semantic plane, the modus structure remains referentially insufficient due to the LGI synsemantics. Synsemantics can be removed only in the consequent dictum corpus.

The modus incompleteness is due to the fact that LGI requires an expansion on the basis of its logical characteristics (logical valency), i.e., the internal organization of the predicate includes such a logical-semantical component, which is *per se* an indicator of the LGI openness, a language tool, which requires its continuation and expansion in accordance with its own logical meaning needs.

The predicate has several semantic qualifications:

1. Sense of the predicative sign.

2. Sense of the predication.

3. Specific relational characteristics: (1) time; (2) modality; and (3) aspectuality.

Simultaneously with the realization of these components, the main factor of the predicate essence becomes provision of the reality reflection processes, intentional character, and relaying of the content of a communicant's thoughts. There is a broad spectrum of propositional attitudes that could be categorized under the general heading of 'intention'. These attitudes include wishes, desires, wants, prior intentions and intentions-in-action, to name a few that have been discussed in the literature [56, 352]. This view of intention is consistent with what other

authors in speech act theory have proposed, however they have frequently used different terminology to refer to the same concept. The role of intention is the same as 'want' used by [5; 17], 'goal' as used by [38], and 'prior intention' as used by [55]. Therefore, the leading role in the predicate competence is played by initiation of the logical structure and syntactic correlation.

The modus structure with the corresponding type of the logical predicate is represented by various LGIs. An LGI comprises various components represented by verbal lexico-semantic groups (LSGs). The LSG is understood as a class of words within one part of speech, which is consolidated due to the uniformity and closeness of meanings, i.e., has at least one paradigmatic seme. When LSGs are singled out, linguistic criteria are taken into account, specifically, meaning interactionalism and semantic closeness. In each LSG, the dominant component is singled out. In its turn, archiseme is singled out within this component.

The significant of the dominant component is the maximum abstracted sign, and the denotation is any object signified by the LSG constituents [32, 36]. The widest (in terms of their volumes) LSGs connected by a common meaning, which are relevant for the entire LSG, form semantic fields.

It should be noted, however, that by virtue of the functions assigned to it, the predicate in the modus, as a rule, is released of the normative lexical filling. Then, the components of the communicative effect (modality, emotionality, assessment) become most important, as well as the components of ontological-semantical correlation, i.e., information about place, time, reason, consequence, etc. Since these components are communicative-significant, we should stop at the structures of speech acts.

The following acts are discerned in the speech act theory:

a) locution, i.e., the act of pronunciation of the utterance;

b) perlocution, i.e., the propositional act being a combination of the reference (application of language signs to actual objects and phenomena) and predication (attributing of specific properties to the said objects);

c) illocutionary act, i.e., attribution of the communicative function to the utterance [10; 55; 59; etc.).

From the logical viewpoint the most important item is the illocution, so as "illocutionary acts are still useful for planning for a number of reasons. Most importantly, they provide a convenient level of abstraction at which a planner can reason about recognition of communicative intentions without actually having to construct the details of a surface utterance" [7, 88].

Therefore, the modus that functions in an illocutionary act has the communicative-pragmatic directivity, and the predicate typology based on logical meaning reveals the illocutory power of the entire utterance. "The utterances people produce are crafted with great sophistication to satisfy multiple goals at different communicative levels. For example, in a single

utterance a speaker may inform a hearer of two or more propositions, make a request, shift the focus of the discourse, and flatter the hearer" [6, 6].

Schematically, the logical structure of the modus can be represented as follows:
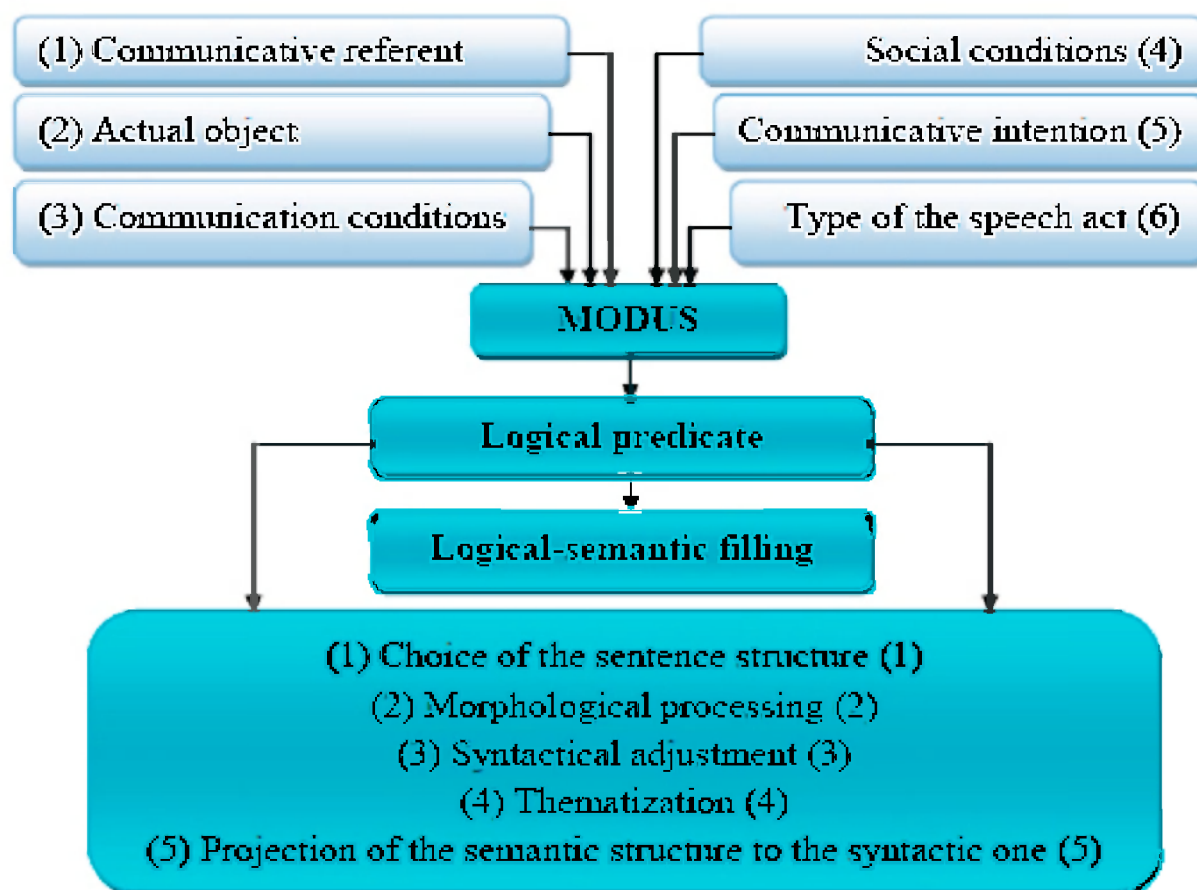
Thus, the logical-linguistic concept is characterized by specific features of the filling of the logical-semantic predicate, which is structured basing on the isolation of the logical criterion. The modus being realized in the semantic-syntactical structure determines the values of the logical predicate, which conditions the entire logical MDC potential.

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