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TEXT-FORMING THROUGH THE SENSE DYNAMIC ASPECT

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ABSTRACT

The article studies the text-forming function of valuation in scientific discourse. The dynamics of developing a scientific text reflects the dynamics of cognitive process. The fact of knowledge is fulfilled through the valuation of available knowledge and the ways of its development. The valuation attending the process of forming new knowledge is deliberate choice performed by the author. The latter chooses a certain cognitive actions aimed at the solution of heuristic task and its realization in the text.

Key words: text, discourse, intertext, the sense dynamic, components of knowledge, text forming

Modern linguistics understands language as a thought process based on the use of knowledge contained in a man's head. As this takes place, all explanations of actual (and ideal) objects are expressed in terms of their verbalized description, i.e. they represent language *text* – oral or written. In other words, knowledge as process and result of human cognitive activity is the basis of text as verbal product of reality perception.

The study of cognitive process reflected in text is inseparably connected with the notion of ***intertext*** – global involvement of specific statement in the overall context of related and closely related statements concerning the same topic / scientific problem. Such interpretation of intertext constitutes «wide» or «radical» concept of infinite text, intertextual in each fragment. Pursuant to this concept there is common intertextual area between all composed («alien») and being composed («own») texts [1], so perception of text is continuous reading in infinite text [2] performed due to reader's perceptive consciousness [3].

Such wide conception of intertextuality makes it evidently impossible to perform analysis of relations between different senses in specific text, and linguistic loses its research aims. In this connection German scientist R. Lachmann suggested to distinguish 1) dialogueness as universal text dimension and 2) dialogueness as specific method construction sense, as dialogue of own and alien opinion [4]. This resulted in formation of «narrow» intertextuality model, meaning that intertext is a deliberate denomination by statement author of interrelation of own semantic position with the alien one/ones. Consideration of intertextual links and polyphony of semantic positions in text contributes to reconstruction of worldview (historical, political, economical, national etc.) of native speakers, reconstruction of time spirit. This is already not so much text, as ***discourse*** – text in its informative and semantic relation with global cultural process [5]. As U. Maas stated, discourse expresses relevant language formation in relation to socially and historically defined social practice [6].

This article refers to special aspects of new knowledge formation in scientific text or meaning dynamics in cognitive activity. Dynamic aspect of research requires use of terms and notions of discourse theory. In this connection we define scientific text as fragment of discourse correlated with scientific type of activity destined to the search and expression of new knowledge about objective world. Discourse character of this process is realized by means of new and old knowledge polyphony, common character of their components in the process of unfolding of whole (completed) work content.

Method of researching text formation patterns via polyphony of textual meanings lies not only in discourse-analysis area, but also in the sphere of functional stylistics.

Functional stylistic analysis of integral scientific text makes it possible to consider *knowledge* from the point of view of its fixation, text-generating role, i.e. reflection of its generation and expression in the text with an emphasis on production of *new knowledge* in relation to the existing system of

scientific information. In this respect knowledge proves to be a certain centre of cognitive activity as such, its aim, sense and content.

Knowledge understood in this way as an object of scientific text analysis, presents itself as the whole, and its constituents (by law "part – whole") are *old (known) knowledge* and *new (unknown) knowledge* as components of conceptual knowledge about subject (event, property) of reality that author develops and expresses in the text.

Division of scientific knowledge into components "old – new" is connected to the nature of perception, i.e. has gnoseological roots. So, for instance, the moment of non-understanding is regarded as the highest level of understanding in psychology and philosophy [7, 8, 9, 10 et al.], when perceived and mastered knowledge forces subject to fix in consciousness the transfer to the next round of reality perception, i.e. transfer to the birth of new knowledge. Compare idea that the highest level of understanding does not compel to agree to the perceived in advance, on the contrary, it uses text otherwise – not to stimulate new texts, but to stimulate transformation of own consciousness into consciousness that is capable to assimilate new reality. In other words, we encounter the highest level of understanding when activity aimed at reality perception leads us to the necessity of transforming both own and general scientific system of knowledge to mental creativity concerning generation of *new* knowledge. Consequently, we can say that knowledge presented as unity of opposites "old – new" possesses text-generating potential and can be considered from this point of view.

Components of old (known) ***and new*** (unknown) ***knowledge*** *– are axiologically defined meanings that are materialized in work's surface texture and represent in their integrity incremental dynamics of scientist's cognitive and communicative activity that is aimed at the generation and justification of new scientific knowledge in the text.* Old and new knowledge, understood in this way, are text units, i.e. *they express typical content-semantic structure of scientific work, are connected with implementation of author's cognitive attitude and orientation towards reader in the process of creative activity, feature structurally intensional integrity and text-building function.* Thus, *interaction of old and new knowledge components in the process of text development ensures its content, sense and composition integrity.*

It is essential that, in the process of scientific knowledge objectification in work's speech texture, of greater importance is not *scientifically old*, i.e. already known to the science and recorded in some earlier texts (intertextual knowledge), but *communicatively*, or ***contextually old***, known from left context of the given specific scientific work (intratextual knowledge), i.e. knowledge used in a certain discourse for an incremental development of scientific concept, when author "delivers" new knowledge by small portions against the background of repeatedly reproduced earlier knowledge that became clear to the reader due to its communicative recognizability. In other words, contextually known knowledge in the text serves as intellectually mnestic conductor of new knowledge that proves to be possible and communicatively relevant only on the basis of known knowledge.

Consider, e.g., such means as *we earlier stated that*; *in previous chapter we said that*; *as we emphasized*; *as it was mentioned before*; *we several times mentioned about*; *let's stress / repeat / remind once more* etc. that are so frequent in scientific texts. Such units allow the introduction into verbal texture of those knowledge components that directly belong to the author's concept, i.e. to the proper new scientific knowledge.

As hypothetical knowledge transfers to more proved knowledge, concentration of contextually old knowledge per text page increases. That is connected with the process of accumulating knowledge on object under study within separate communicative act. That is why in the second half of text space and especially during last stages of its development we witness "semantic attack" effect (from author's side) by new knowledge towards reader's perceptive and interpreting activity: in these text parts elements of new conceptual knowledge are particularly frequent, they literally "drown" surrounded by elements of contextually known knowledge (that is already read by recipient in the previous part of the text). Therefore, in such fragments scientifically new knowledge is characterized by maximal density per text space unit and intensity of its expression increases to the highest level. Text fragments featuring maximal density of new scientific sense (these are usually fragments dealing with foundation and generalization of author's hypothesis) can be called the parts of "conceptual explosion". Here the volume of intertextual knowledge is usually insignificant, but the volume of properly author's, new knowledge, and, accordingly, the density of intratextual alternation connected with formation and expression of new knowledge, considerably increases [11].

The foregoing allows us to regard interaction of old and new knowledge components as text-generating mechanism in scientific activity.

At the same time it is just a mechanism of cognitive discourse development. Being a mechanism, it has, if we may say so, its energy, its cognitive stimulus-motor, which is, in our opinion, the estimation. That is quite logical since estimating operation is in the nature of consciousness and

perception as purposeful activities. As far back as A.A.Potebnia emphasized that everything is language is estimating and expression and thought is always accompanied by confrontment against another thought.

As a rule, unknown acts as a problem emerging from the influence of new demands that are generated by already achieved level of knowledge. That means that search never begins from zero point but is performed given some minimal information that is used by a scientist either for support (positive estimation of the present), or denial (negative estimation of the present). However, an estimation of the present is, at the same time, an estimation of *new*, expressed openly or "covertly" in the subtext. Knowledge can be considered scientific only if author reveals certain relations, connections or dependence between new and existing scientific theories. Thus, *new* appears as an estimation act of "old", and this estimation is being performed in terms of the emerging new knowledge [9].

Therefore, scientific knowledge as such (and new in particular) may be considered as **initially estimative**, or – in a broader sense – **axiologic**. Axiological character of scientific knowledge is generated by the nature of scientific work as specific branch of humane activities that aims at the formation of estimative information about objective world. Therefore, the purpose of any scientific search is discovery and formulation of some property of reality object, consistent pattern or law of its functioning etc. Thereby, each searching act that is recorded in the text implicitly "claims" to be truth, or, in terms of axiology, – scientific value. The latter is possible as the highest level of axiological chain that attributes specific character of cognitive activity in science: estimation — norm / law / consistent pattern / tendency — value. In other words, estimation is the first indispensable step from ignorance to knowledge in its new (initially defined in text by the scientist) or renewed role. In this regard, it is quite natural to state the fundamental importance of estimation for the process of new scientific knowledge development and formation.

Scientific text is realized as a fact of socially significant event by means of intertextual interaction of knowledge components (interaction of scientifically old and scientifically new knowledge). Dynamics of thought itself, its phased transition from old knowledge that is already known in this discourse to the new knowledge that is not expressed yet, is performed by means of intratextual interaction of knowledge components (interaction of communicatively old and communicatively new knowledge) in the text. It is important that just estimation is the basis of conceptual knowledge that is formed and developed in text. Explicitly or implicitly expressed estimation is always connected with author's choice of concept, idea or just judgment, opinion, belief, statement, fact as certain (positive or negative) scientific value. According to philosophers, estimation specifies perspective of cognitive process and serves as the first indispensable step in transition from ignorance to knowledge, i.e. from problem situation and problem to new scientific theory.

The extent of subject "ingrow" into a certain way to perceive reality presupposes subject-object relations of "meeting" of different senses, correlation of their attitudes and their relevant reformation. It is establishing of correlations (signed "+" or "–") between different subjects of scientific sense, to be more exact, between senses of different subjects, that serves as implicit prerequisite of meaning making. Besides, hypothetic premises (as initial designation of new knowledge in text) turn out to be such only because they are there along with "premises with already established truth", therefore, there never was any new knowledge that was not defined, to some extent, by the preceding knowledge. Furthermore, human rational behavior is controlled by the value oriented attitude system of his consciousness. This system is based on socially conventional laws, norms and rational behavior patterns.

Thus, nature of perception is fundamentally estimative. What are functions of estimation in scientific discourse? Being, as we already mentioned, a stimulus of interaction (alternation dynamics) for old and new knowledge components, estimation penetrates all moments of their interweaving, i.e. participates in forming and arrangement of text joints of scientifically known with scientifically new and of contextually known with contextually new knowledge. Estimation accompanies all thinking activities of an author: 1) actions aimed at the formation of *new knowledge content* (ontological aspect of epistemic situation); 2) actions aimed at the determination of ways and methods of scientific problem solution (methodological aspect of epistemic situation); 3) actions aimed at the expression in text of personal, author's attitude to the subject of thought, as well as actions especially addressed by author towards would-be reader (axiological aspect of epistemic situation).

The notion of *epistemic situation* is widely used now in functional, including functional stylistic researches. This notion reflects generalized representation of extralinguistic factors forming the basis of cognitive activity and defining specific character of scientific text stylistic and speech organization.

In addition, estimation penetrates all aspects of epistemic situation, that means, it directly participates in formation and expression of each cognitive action, but, mainly – by means of

estimation, explicit or hidden, interrelation of these actions, included in the texture as one or other variety of one of knowledge components, i.e. as scientifically communicative new or scientifically communicative old is performed. Unfortunately, the framework of this article does not make it possible to examine this issue more or less fully, therefore we will show the relationship of estimation and cognitive dynamics only based on the example of one cognitive action forming the ontological aspect of scientific knowledge expressed in the text, namely based on the example of **explanation operation**.

Estimation of semantic explanation *– that is estimation of the particular cognitive action aimed to fixation of representation importance (need, significance) in the concrete fragment of the semantic development of the elucidating argument in favor of the expressed position* [11].

Logical operation of explanation is understood as the method, with the aid of which the object is determined not completely, but only in one sense and with the specific purpose (that may also include preparing of the complete logical definition). "Russian grammar" 1980 gives the following handling of elucidating relations: "In elucidation as such... two different denominations are referred to one and the same object... in such case the first and the second terms either different names to one and the same.., or the first term of series is specified and defined concretely by the second one.., or the second term of series serves as revealing list... Explanation... explains (interprets), defines concretely or evaluates" [12].

In both statements there is the idea that explanation "working" on the principle "about the same, but in other words", interprets preceding "term of series", thus from specific position (text author's point of view is usually realized here) it performs evaluating function with respect to it. It seems that explanation is the method to express estimation of speech object in the aspect of its other understanding; this is the means of fixation in the text author's selection of precisely this, elucidating action, from many cognitive actions. The gradual polishing of various substantive subtleties (details) of new scientific knowledge takes place, in many respects, be means of explanations (as well as by means of cognitive appraisal action of scientist). It is natural that operation of explanation is rather frequent in scientific text. With the aid of such operations the scientist deepens both his own idea about the object in question and reader's idea about it, at the same time laying the way for the latter to more rapid and easier understanding of entire concept as a whole.

As regards to the assertion about *incompleteness* of speech subject definition within the framework of explanation operation (see definition in Logical dictionary), first of all, it is not partial explanation of some thought that is meant here but explanation of its part, when the elucidating estimation relates to the word, word combination of a simple sentence or part of a complex sentence.

Usually estimation done during explanation operation stimulates the motion of the thought from component of contextually known knowledge to component of contextually unknown knowledge, but wider context is necessary in order to determine the place of these components in the system of scientific knowledge (i.e., within relationship "old – new knowledge") of the entire text.

The elucidating statements are predominantly explicated and are introduced into the text by the explanatory conjunctions *that is*, *namely, precisely, or*; by parenthetical words and word combinations *otherwise, which means, in other words, better to say, briefly stated, being otherwise expressed, in the sense*; by the monomial and binomial constructions *By... is understood, By... we understand* etc., as well as by the parts of the complex sentence *We have in mind that; In the sense that* and the like etc.

E.g.:*...there is no theory of the most undisturbed initial state,* ***in the sense that*** *there is no theoretical conclusion...*;*...the mechanism of language generation is aimed... at the generation of whole statements, but not at the algorithm of the simple addition of the words.* ***In other words,*** *communicative focus of the statement...*; *The examination of language from one or another, but only one side can reveal only one,* ***or*** *surface side of language,* ***namely*** *its eventual special features...*; ***By*** *author's word* ***is understood*** *the narration...* etc.

Estimation in the process of explanation can be done in the text with the aid of graphic means – brackets, colon or dash; the combinations of symbolic and verbal explanation are also frequent enough. Consider the following: *In our work abstract* ***(mental)*** *concepts are examined*; *This issue* ***– how author's ideological position is expressed in the text where author's voice is totally absent –*** *was raised above in connection with the narration...*;*...Lithuanian super-ethnos developed in parallel with Russian super-ethnos****: it was in the stage of passionary inspiration****...*;*...the descriptiveness of style by the mere fact of its existence, by its intensity, by the method of its realization* ***(simply stated, in where and how it is manifested)*** *ultimately also characterizes the narrator...* etc.

In the texts of exact sciences estimation in the process of explanation is frequently accomplished by language of formulas, see: *According to our hypothesis, the order of values* $\square h^{\beta}_{\alpha}\square$ *for all modes of all three types at the initial moment* $t_0=10^{-43}$*sec must be identical.* ***In other words,*** $c_2 \square_0 \square c_6 n \square c_z r_0 = f(n)$"; "*Formula (4) makes it possible to estimate the region in the area of transversal*

energies, where the majority of quasi-channeled electrons are situated at the depth z: $0 \le E \le E^{max} = z \le [1+(1+2U_m/z \le 1^{1/2}]$ etc.

In the process of verbalization of scientist's mental cognitive activity estimation during explanation can merge with the estimation that accompanies specifying cognitive actions resulting in bifunctionality of the same statement that acts as specifying explanation. Compare: *The determination of consciousness as ideal expresses the specific content consciousness category,* ***namely: that aspect of category content that is responsible for logical opposition of category to matter***; *This is reached by introduction into the language of new rules that regulate either above-syntactic structure of temporal segmentations* ***(as in the poetic language)****, or the form of lingual descriptiveness, i.e. the method of constructing the described situations* ***(as in the artistic prose)***;*...the presence of "rigid"* ***(corresponding to big values of frequency*** ν_0***)*** *optical modes is characteristic for them* etc. The thought expressed in the first part of such structures, proves to be not entirely intelligible and clear for the reader; therefore in the second part of the statement it becomes subject of author's content restriction (specifying estimation) and content expansion (elucidating estimation) at the same time that gives addressee the possibility to compare content of both parts and understand them clearer and more specifically.

Of interest are the cases when elucidating definition "strongly develops" the precedent thought resulting in content enrichment of specified, i.e. in new knowledge increase. Here we are dealing with transfer from elucidating definitions to explanation proper.

Let's consider the example, where the emphasized part of the sentence is the main content novelty, for which, strictly speaking, author undertakes explanation that is complicated by specifying and elucidating relations. However, in the process of explanation the author's point of view (conceptually new knowledge) enlarges its semantic boundaries, so to say "outgrows" with novelty by means of contextually new knowledge (further in examples "new knowledge" – NK): *Even if we complicate the language,* □[specification (+ NK)] *introduce other word categories beside names and add some rules, but leave fixed character of the language,* □[elucidation] *i.e. stop generation of language means, still complete correspondence of language and thinking remains.* □[elucidation = explanation (+ NK)] *(This applies to any dead language:* □[1st specifying elucidating explanation (+ NK)] *due to the concrete singleness of specific meanings dead language will always contain the finite number of statements. The living human language is not fixed. The infinite number of conceivable contents can be expressed with the aid of limited number of linguistic means).* □[2nd specifying elucidating explanation (+NK)] *This is reached because of the special mechanism – the mechanism of meta-language...*.

Another example: *Any narrator is not only subject, but also the object of representation, and "detached" narrator is doubly or three times so:* □□1st specifying elucidation = explanation (+NK)□ *the reader looks not only through it at the depicted events, but also at it, and, only comparing one with another and making corresponding corrections to the interpretation of events, proposed by teller, the reader understands author's position proper.* □□2nd specifying elucidation = explanation (+NK)□ *M.M. Bakhtin noted very aptly: "Author realizes himself and his point of view not only to the narrator, to his speech and his language... but also to the object of narration...*".

In principle, this is the way of new knowledge formation in scientific text: each fragment of author's concept "runs" through a variety of different estimating actions, as a result of which this new, in the first place, it is formed as an integrity, in the second place, it becomes maximally (as much as possible) intelligible, clear, concrete and – what is important in the perception of voluminous scientific texts – recognizable for the reader as the author's new scientific knowledge proper.

In conclusion let us emphasize that in the knowledge representation dynamics any given estimating actions rarely realize themselves in the pure form; most frequently, exposition in the concrete fragment appears as semantically syncretic cognitive appraisal action with respect to the object of the thought.

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