HIERARCHICAL SYSTEM OF SENSE-MAKING. THE "HUMAN-TEXT" SYSTEM

Abstract

We have conducted a series of empirical researches where our goal was associated with the clarification of the structure of interaction “human-text” in the process of sense-making. We have applied system approach to the research of interaction “human-text”. This system also includes a human, a text and a process of interaction. The goal of such system is making of sense.

The text was represented as an element of system which has the following hierarchical structure:

1. vision – purpose the author pursues during writing the text; it is organizing, providing coherence and integrity of the text content;
2. content – the set of actions, objects, participants aimed at the expression of the author’s vision;
3. language units structured in a certain way and intended to express certain text content. The text possesses the complexity for a man at every level of its content. The man in the process of sense-making overcomes this uncertainty and builds his own subjective image of the text. As far as the system-formative factor and the final aim of “human-text” interaction is sense-making (as a result), the form of a man’s activity (sense-making as a mode) must have hierarchical organization similar to that of a text.

Before the experiment the hypothesis was formulated that the structure of “human-text” interaction during sense-making is not homogeneous and is obviously represented on different hierarchical levels which, on the one hand, reflect the peculiarities of the hierarchical structure of the text, and, on the other hand – the human activity aimed at overcoming the text complexity at every level.

Besides, we have formulated the hypothesis that during the interaction “human-text” the correspondence between hierarchy of text complexity and the level of sense-making by the man must be observed.

For researching the structure of interaction “human-text” we have chosen the method of intertextual questions, since this method satisfies the demands for researching the system “human-text”.

The question is the human’s purposeful activity associated with making sense of the text through which he overcomes text
complexity. So, the method of intertextual questions allows to explicate and fix the process of interaction “human-text” during sense-making and to research its structure.

The procedure of the experiment was as following. The participants were offered a narrative text in Russian language consisting of 50 sentences, and 2 advertising texts of 15-25 sentences. In order to investigate the structure of interaction “human-text” in the process of sense-making, that is to have the possibility to fix the process of interaction during making sense of the text, we should specify certain fragments in the process of interaction “human-text”. That is why the text was offered to the participants by separate sentences. We will call them “positions”.

In the process of experiment we have previously chosen 2 forms of text presentation. In the first case the participants were sequentially presented with cards for every text position, in the second case the text was read aloud by separate positions. Comparing the questions obtained from the informants, we received evidence of no significant differences between the answers of the first and second groups. Meanwhile, the group which was presented with the cards, worked slowly spending time of thinking their questions through. There is a well-known fact in experimental psychology: participants of the experiment have fear that their results might be evaluated, so they adjust (adapt to) for the goals of the experiment and seek to control their reactions. It may be the case in our own experiment. As far as we were interested in the participants’ spontaneous reactions, we read the text aloud. This form of text presentation also satisfied the time criterion since the text offered was rather lengthy and the use of cards, taking into account the quantity of the participants, would take a lot of time.

45 persons took part in the research with narrative text, and 35 persons – with advertising texts. They were offered the following instruction.

**Instruction.** We offer you to take part in the experiment, the aim of which is to reveal the mechanisms of sense-making. We will read you the text by separate sentences and you should try to understand it as well as possible. After each sentence you should formulate the question associated with the text content which is most important at the moment of reading. You may ask question associated with its previous and further presentation. Each question should be fixed in the questionnaire under its own number that corresponds the number of a sentence read.

As a result, the massive of intertextual questions was obtained. As far as we were interested in a structure of interaction “human-text”, especially in the relationships between the text structure and making sense of it, we were to classify all intertextual questions. In the research we have discovered the following classes which described all the multitude of intertextual questions.

**1st class. Formal level.** These questions are asked with the aim to find out the meanings of words, phrases, the coherence of language units as well as language forms and word combinations. These questions are directed towards, basically, connotative, occasional and figurative meanings of words. The objects of such questions are basically metaphors, metonymies, idioms.

**2nd class. Static content level.** Questions at this level are aimed at clarifying the text aspects associated with its content. The questions are singled out that are directed towards statistical dimensions of a sentence; participants, their attribution, status; objects of action (instruments, devises, elements of objects); place and time of actions.

**3d class. Dynamic content level.** The questions on this level are aimed towards the dynamic dimensions of the content: to the direction of action; rapidity of action; the mode of action; the result of action; action content, specifying the sequence of the action carried out.

**4th class. Logic and sense level.** These questions are aimed at specification of the relations between content dimensions in the previous, already presented, or in a current text positions. In so doing such categories as the purpose of action, its cause and reasonability are actualised.

**5th class. Questions—Inferences.** They result the text fragment presented, carry out fixing, completing and integrating function in the making sense of a certain text fragment, they summarize. As a rule, such questions are conclusions and statements in their form. It should be noted that this part of questions-statements most fully reflect the respondents’ subjective preferences and abilities to adequately complete making sense of a certain text fragment.

As a rule, for each text position the participants asked questions from different groups. The were virtually no such text positions that were asked with the questions of only one group.

Since this classification describes all the questions that may be found on every position of the presented text, we may conclude that this classification of questions reflect the interaction “human-text” during making sense of this text. We paid attention to the fact that the resulting classes of questions are not homogeneous and organized into hierarchy.

Formal question in such case represent the simplest kind of sense-making – on the level of lexical units; content questions are
aimed at specifying objective and content aspects of text, on the level of participants, objects, place, time as well as on the level of actions that happen to participants, objects in time space; logic and sense. Questions and inferences represent the most complex kind of sense-making aimed at the creation of coherence, integrity and identification of the purpose of text.

Consequently, this classification reflects hierarchical structure of sense-making. Hierarchical structure of sense-making was offered by Y.A. Mikk [6], Z.I. Klychnikova [4], I.Z. Zimniiya [3], A.A. Smirnov [9], Z.D. Lvovskaya [5]. So with the help of the method of intertextual questions we have experimentally revealed that interaction “human-text” during sense-making is heterogeneous and has hierarchical structure. In the process of experimental research we formulated an assumption about the existence of linear dependence between the number of the text position and the quantity of questions from each group. In other words, we supposed that there is dependence between the increasing of a text position number and the decreasing of formal questions. We also supposed that the amount of inferences increases as the text unfolds; the amount of the questions of all the other groups decreases with the number of sentences increasing.

We proceeded from the assumptions about stage-by-stage change of the text complexity for a reader. We supposed that at the beginning the subject assimilates the content objective aspect; gets acquainted with main participants, object surrounding, then he acquires the actions; establishes causal relations and draws inferences. So the hierarchy of text complexity increases sequentially. Our assumption is based on the concept of “text without context” introduced by M. Gaaze-Rapporrot and A.D. Pospelov [1]. They model texts out of parts where firstly the participants who don’t have names, only indications, are introduced, then the actions between them are described and then the causal relations are explicated.

Reduction of the amount of formal, static, dynamic and logical questions by the moment of full text presentation is obviously explained by the main text concepts, gradual acquaintance with the object surrounding the participants and logical relations in text. The amount of dynamic questions slightly reduces as the text approaches to its end. It is obviously associated with the fact that at the end the text is less saturated with actions as it was in the beginning. The amount of inferences slightly increases, but at the same time, since there is no explicit increase, the operation of inferences is obviously evenly presented.

At the same time, we paid attention at the existence of certain text fragments where our assumption about sequential change of text complexity along with the increase of position was confirmed. Our data allow to make a conclusion about the existence of certain fragments in the text comprising different complexity in them (on the level of language meanings, on the level of objects and participants, on the level of actions and logic and sense relations). And there are certain text fragments for each level of complexity, their limits don’t coincide.

So, text complexity of each level changes disproportionately to the increase of the number of text position and concentrates on certain text fragments. Since these fragments are not ordered sequentially according to the complexity from the level of meaning of lexical units to the level of causal relations and inferences, the conclusion can be made that the complexity of the text doesn’t change sequentially simply to comply one in the context of reading a text. These hierarchical levels can be present simultaneously and replace each other in a loose order. So, our hypothesis about the sequential change of the complexity of text wasn’t confirmed.

Since we were interested in the structure of the process of interaction “human-text” during sense-making, especially in the relationships between the features of the text positions and making sense of them, we needed to analyze the features of such text positions which correspond certain kinds of sense-making. The appearance of the dynamic questions is associated with the description of actions (sequence, rapidity, results). We also paid attention to the fact that dynamic questions between inferences coincides with negative peaks of logical questions. It also allows to say that dynamic and logical questions really belong to different levels of sense-making and bringing in stimuli at the dynamic level prevents sense-making on a higher level. Consequently, the correspondence between the complexity of the text position presented and the level of making sense of it preserves for dynamic questions.

Summarizing the content of these positions, we can make a set of conclusions:

1. These sentences possess the features of sense completeness in a text.
2. Sense fragments of the text are singled out which are completed with the increase of the proportion of inferences, that is on these positions the conclusions about the sense fragment of a text are made.
3. The tendency of increasing inferences according to the chronological sequence of position in a given semantic fragment is observed.

The inferences of figurative meanings, comparisons, idioms is observed in these positions. Others are characterized by the brevity in content. Such brevity of a text position led to the fact that informants lost orientation in text content and tried to restore it on the level of the meanings of language units. The increasing of formal questions is accompanied by the decreasing of sense-forming question. In our opinion, it evidences about the mutually excluding sense-making on the level of meanings of language units and on the level of logic and sense relations.

So, basing on the analysis of text positions, a conclusion can be made that the amount of questions of each group depends on textual content. Moreover, there is a correspondence between the level of complexity of the presented text position and the level of making sense of it by the group of respondents. Our hypothesis about the correspondence between the hierarchy of the text complexity and the level of making sense of it was confirmed.

We have also discovered the relationships between the levels of sense-making. Thus, content and formal levels of sense-making are in a reverse relations with the group of logic and sense questions. Basing on this, it can be concluded that sense-making on a lower level (formal and content) prevents sense-making on a higher level (logic and sense), and these kinds of sense-making really belong to different levels of sense-making.

As a result of preliminary research, we have obtained classification of intertextual questions which describes all the massive of questions and reflects hierarchical structure of interaction “human-text”. This classification allows to structure the process of interaction “human-text” the aim of which is sense-making.

We received evidence that the process of interaction is heterogeneous (not uniform) and is represented on different levels: formal, content, logic and sense and the level of inferences. And sense-making on a lower level prevents sense-making on a higher one.

Since the hypothesis about the correspondence between the hierarchy of the text complexity and making sense of it was confirmed, we can say that the information presented in the text generates a corresponding level of comprehension. It means that the text possesses a sense-formative function, that is it influences sense-making during interaction. Consequently, the quality of the presentation of textual information will define the character of sense-making. On the other hand, the correspondence between the hierarchy of text complexity and making sense of it allows to say that making sense of a text is more adequate if a person orients to the text content trying to making sense of it. In this case he reacts more acutely to the level of the information presented in a text. At the end of experimental research lets us summarize the data and make important conclusions.

We have experimentally discovered linguistic features of the hierarchical structure of a text. Among them we can single out “simple” and “complex” features. By saying “simple” we mean those which are fixed by concrete text elements, on one of the lexical levels, lexical-grammatical or lexical-semantic one. For example, lexis with notion-objective, processual-acting meaning, etc.

“Complex” structure features, on contrary, don’t always find concrete expression in a text. As a rule, they have a set of indicators both on lexical, grammatical, syntactical and semantic levels. For example, the novelty of elements, real reference, explicative power of utterances, the presence of target function in sentences, reasonableness and conditionality of text elements, etc. We will call
these features “contextual features of the text”, since they can’t be singled out without the analysis of the context.

It should be noted, that the main differences of the hierarchical structure of texts are defined not by “simple” features, since every text contains lexica with notion-objective and processual-acting meanings.

The conclusion that the main differences of the text structure lies in contextual features that organize the structure (architectonics) of the content and thus define the meaning of a text, is also important, since the analysis of the meaning of “simple” linguistic features without contextual ones is not constitutive.

Consequently, it is these contextual features of a text that need to be investigated, they are basic and define its differences. Moreover, modeling the text without contextual features is unreasonable, unconsiderate.

However, a question arises: what defines the context and in relation to what is should be studied? Often during interpretation of narrative texts (for example, hermeneutic approach) the analysis of an appropriate historical setting, author’s biography, etc. is conducted. The need for this arises especially because the purpose of the text is not expressed. Thus, the researcher has to interpret the context by himself and to define the purpose of the text for the author. Is should be noted that sometimes the author himself doesn’t fully realize the purpose of the text (the difference between the critics and the author’s opinion). This creates for the researcher additional difficulty and leads to subjective ambiguity in interpreting the context and the purpose of a text.

That is why in our research we have chosen special orientated advertisement texts, that is the texts with a clearly defined purpose (perlocutive effect): stimulating reader’s actions aimed at surrounding reality. In this case the context is defined by the purpose – to make influence. The meaning of the context and architectonics of the text and the use of certain language tools must correspond to the purpose of a text. Here the context is a means for achieving the purpose. All the above-mentioned allows to make a conclusion: the text should be studied and designed in relation to this purpose.

In our work we defined linguistic features of the following analysis and modeling of texts in actively influencing communication channels (for example, advertisement). It especially allows to analyze the linguistic features of an advertisement with a certain purpose which is expressed as an exclusive sale offer.

Since the texts may be aimed at different purposes, for example, creation a presentation, understanding, impact on emotional state, then, consequently, the context for achieving these purposes must be different as well. So, linguistic features characterizing these contexts are also different.

Thus, analyzing text in relation to various purposes, we have a possibility to reveal various phenomenology, characterizing the text organization (in our case – personifying effect). This topic is perspective for further empiric researches in this direction, since at the current moment it is not studied enough.

The offered approach to researching the texts in the actively influencing communication channels allows to study the context in relation to the purpose of a text. It can be easily transferred to other special orientated texts, for example, political ones.

Special orientated advertisement texts chosen for the research have explicitly expressed purpose – perlocutive effect. System presentation of interaction “human—text” allows to consider the features of a human and a text in relation to the purpose and to define those one that influence the perlocutive effect. We have obtained interesting experimental data about the respondents’ individual strategies during the interaction “human-text”. Unfortunately, these materials exceed the frames of this work.

Designing of a research oriented especially towards the process of interaction as a representative system characteristics allowed to investigate the system “human-text” as well as linguistic features of a text in relation to perlocutive effect.

As far as the linguistic features that we discovered characterize the context as a means for achieving purpose, we will call them functional aimed, and the text structure that was the object of research will be called functional aimed, correspondingly.

Thus, the feature of a functional aimed text structure is a phenomenon of personifying effect that we have discovered. In its function, personifying effect is similar to “communicative effect” of an utterance [2]. In authors’ opinion, communicative effect consists in accepting the utterance by the reader or listener. They also note that the perlocutive effect of an utterance is impossible without the communicative one in our case, since perlocutive effect, in contrast to the communicative one, is aimed not only to the accepting of utterance but to the influence upon the subject as well.

That is why it is more powerful, active and externally orientated feature of the functional aimed text structure and can be considered as a separate phenomenon.

Personifying effect has linguistic features in a text and is represented on different hierarchical levels. Thus, on the one hand, the effect of personification is achieved at the expense of the use of certain lexical units which can be isolated from the text. For example, personal pronouns of the second person, verbs aimed at the reader, expressing the position of the speaker – lexical markers of the semantic field “successfulness”. On the other hand, personifying effect has contextual features, for example, novelty of the text elements, reasonableness and conditionality of the appearance of elements of text content, real reference, presence of the target function in sentences, constructive communicative strategy (absence of pumping). As we realized, personifying effect can’t be isolated on the level of “simple” features and is defined by the contextual features of a text.

On the one hand, it has hierarchically ordered form of expression in a text. On the other hand, it reflects the quality (condition) of the functional aimed structure as a system in relation to the purpose (perlocutive effect).

Thus, personifying effect directly influences the perlocutive effect and therefore is an obligatory component and a characteristic feature of advertisement texts. However, the use of linguistic attribution of the perlocutive effect doesn’t define its achievement by itself, that is it has different degree of the adequacy in relation to the purpose. Thus, for example, “formal” text positions have an explicit personifying attribution, for example, assertives and commissives that contain verbs indicating the possibility, intention and appeal to action; interrogative form of sentences. These features are also characteristic of the functional aimed structure in “formal” positions.

Alongside, their usage in “formal” positions is not appropriate, since it doesn’t take into account contextual features, for example, reasonableness and conditionality of the content elements by the text presentation. The absence of the objective function in interrogative sentences, of the agent and performative verb in assertives and commissives evidences about the poor quality of organization of personifying effect in functional aimed structure in “formal” positions. It should be emphasized that such analysis of the quality of personifying effect is possible only in relation to the purpose of the text.

In modeling special orientated texts with the predictable perlocutive effect, functional aimed text structure must be such that the organization of the personifying effect as a necessary condition corresponds the purpose. And the more the perlocutive effect that must be expressed, the more simple and contextual expressive means of the personifying effect should the functional aimed text structure include. That is why the personifying attribution is a prerequisite for a predictable perlocutive effect, and its adequate organization in relation to the purpose of the text is a its sufficient condition.

It is important to note that linguistic features of the positions revealed in experiment characterize not only functional aimed text structure, but the text content one as well. We will consider this conclusion in more detail.

We have proved in research the hierarchical character of interaction “human-text”. It is represented in the following ways: formal, static content, dynamic content, logic and sense, inferences. As far as the process of interaction “human-text” reflects the features of the object and the subject, we may state that the hierarchy of interaction is defined by the text features and conditioned by the textual structure. This confirms the regularity of the correspondence between the hierarchy of text position and the mode of interaction between man and text that we discovered in the analysis of features of text positions. Thus, “static” positions correspond the lexica with notion-objective meaning, “dynamic ones – lexica with processual-acting, “logic and sense” and “inferences” – lexical markers of the argumentative discourse and the elements ensuring the content coherence and the integrity of the text.
So, we can state that hierarchical structure of the text is organized on notion-objective and processual-acting levels as well as on the levels ensuring the content coherence and the integrity of the text. This structure is called the content text structure, and linguistic features are called content-structural, correspondingly.

This content structure is similar to the structure of the narrative text in a preliminary research which allows to make a conclusion about its basic and universal character for the texts with various purposes. In D.A.Pospelov’s terms [8], the content structure is a “text without context”.

As far as the purpose is a system-formative factor for a text, then functional-aimed structure organizes the content one in relation to the purpose and creates the contexts facilitating the achievement of the persuasive effect. So, by means of analogy, we can call functional-aimed structure as “context without text”.

No let us pay attention to the function of such modes of interaction “human-text” as logic and sense and inferences. We suppose that these modes ensure the relation between the content and functional-aimed structures and the purpose of the text. By saying “inferences” here we mean those text positions which express its purpose, persuasive effect. Positions that provoke inferences must adequately express the objective (purpose) function of the text. In such case the respondents’ inferences will evidence that the persuasive effect is achieved.

References
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Keywords: coherence, nation-discourse formation, concept, colorism.

Every nation as a language community regularly and constantly interacts according to the base of common, known to everybody signs. The concrete language encodes the worldimage relevant for members of the definite nation. It should be mentioned that linguistic worldimage is a dynamic phenomenon, reflecting and changing in the way of life of the language community. People, not only speaking one language but living in the same socio-common and culture-political conditions, for example in the same time in the same country, have the equitable linguistic worldimage. All these facts limit members’ of an interlanguage communication pattern of background knowledge independently of individual preferences. Thus “time” and “place” limit generated utterances due to identity of the members’ of the communication positions. This gives a reason to regard the concrete language community as a different from other nations discourse formation (we use this notion coined by M.Foucault in “The Archaeology of Knowledge” – Milvayskaya T.V., Abbasova L.A.) and to describe a range of people having identical background knowledge as a nation-discourse formation [1, 24].

The discourse analysis of texts generated during one period allows to determine relations set up among concepts which are actual for the concrete society during the concrete period (sometimes rather continuous). It seems to us that periods of contiguity of concepts differ. From 1917 to 1991 the soviet epoch had been connecting such concepts as “труд”, “союз”, “красный”, for example. Besides the abolition of the communist system did not break the relations among these concepts in the native speakers’ language awareness in one stage. Here “the native speakers” is “the soviet people” as the community of vehicles of identical ideology and stock of knowledge that presents notion-discourse formation. The refusal of static character within the scope of ideology caused the dynamic of the discourse. In support of this conjecture, we can carry out cognitive-discourse analysis of the situation of 90s in The Russian Federation.

“Ваучер” had been intimately connected within the scope of nation-linguistic formation with the concept privatization. Every native speaker of that relatively impermanent period realized this notion as a part of the concept «государственная экономика» in its turn. The extracts from the chronicle of 1992 “Независимая газета” illustrate the functioning of the lexeme ваучер and its co-occurrence range, that provides the basis for the coherence within the scope of the articles in point.

Ельцин получил свой ваучер

President РФ Борис Ельцин получил вчера свой приватизационный чек. “Не хочу пользоваться дополнительной месячной отсрочкой для получения своего приватизационного чека”, — сказал Ельцин журналистам. Он подчеркнул, что вместе с другими гражданами России хотел бы воспользоваться чеком в период перехода к рыночному хозяйству.

“Ваучеры”, или приватизационные чеки, были выпущены в январе 1992 года. По сути, это было массовое частное инвестирование в приватизируемые госпредприятия, — отметила эксперт. — Каждый мог купить себе частичку завода, колхоза, банка, магазина.

The lexeme ваучер groups with the verb получит. In the headline, the author uses this lexeme, but in the text he replaces it with the collocation приватизационный чек. This proves the synonymy of ваучер and приватизационный чек. The relative adjective приватизационный refers to the notion приватизация, which characterizes the economic circumstances in the country when the article was written, the phrase «воспользоваться чеком в период перехода к рыночному хозяйству» proves this. The notion приватизационный чек was the part of the concept приватизация.