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**MAIN PRINCIPLES OF IMPLEMENTING KNOWLEDGE  
COMPONENTS WITHIN TEXTUAL SPACE**

Bredikhin Sergey Nikolaevich (a)\*, Pelevina Iulia Igorevna (b),  
Abakarov Anzor Saypudinovich (c), Makhova Irina Nikilaevna (d),  
Chudnova Olga Alekseevna (e)  
\*Corresponding author

(a) North-Caucasus Federal University, 1, Pushkina St., Stavropol, 355017, Russia, bredichinsergey@yandex.ru

(b) North-Caucasus Federal University, 1, Pushkina St., Stavropol, 355017, Russia, y\_pelevina@hotmail.com

(c) North-Caucasus Federal University, 1, Pushkina St., Stavropol, 355017, Russia, anzor.flash@gmail.com

(d) Stavropol State Agrarian University, 12, Zootechnicheskiy Ln., Stavropol, 355017, Russia,  
zheltova.ira71@mail.ru

(d) Stavropol State Agrarian University, 12, Zootechnicheskiy Ln., Stavropol, 355017, Russia, chudnova08@mail.ru

### Abstract

The present article attempts to analyze the cognitive mechanisms of representing individual knowledge components in textual reality based on the emerging terminology systems of highly specialized areas in the scope of the general information-knowledge continuum. Applying the hermeneutic-noematic method, the authors describe the processes of both the primary implementation of epistemological components in linguistic codes and the secondary transformation in the rethought units of close knowledge areas, implying transdisciplinary transitions of verbalizers. The first type of individual meaning facets actualization is based on empirical verification, and the second one – on reflexive verification. Based on the analysis, six stages of the text space and terminological systems formation able to actualize various nuances of the interpreted concept are distinguished. Each unit intensifying episodic components and created on the basis of intentional active reflection, de-objectifying and re-objectifying all possible aspects of complex generalized meaning, has the ability to represent knowledge elements in the text space, which eliminates the paradoxes of en- and de-coding amid the stereotypical perceiving autopoiesis as a self-regulation terminological system, and at the same time provides both subjective and objective meaningfulness of the concepts being verbalized. The basis for the inclusion of knowledge components in the information space of the text is the consideration of both episodic situational components and elements representing semantic memory within the framework of ensuring the adequacy of other communication parties' understanding of the introduced nomens in a non-usual context.

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*Keywords:* Episodic memory, knowledge continuum, sociocultural memory, terminologized concept



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## **1. Introduction**

Modern spread of total information flows and the expansion of spheres of various types of knowledge are of a dichotomous nature. On the one hand, there is a constant delimitation of highly specialized areas, isolating limit specifiers and criterial signs of describing and analyzing phenomena in their concrete representation in the existing information and knowledge continuum. On the other hand, separate discursive practices representing similar areas are combined in their interdisciplinary borderline description. Within the framework of these processes, the growth of entropic phenomena is inevitable in key ways of intensifying specialized and intermediate understanding of the basic units that translate knowledge components, i.e. terminological units.

## **2. Problem Statement**

To solve this problem and prepare a solid foundation for further terminology, it is necessary to develop unified models of actualizing components seeking verbal embodiment and concretizers of individual facets of the terminologized concept. Throughout the long period of scientific knowledge existence, the problems of mental formants in the general system of theoretical comprehension, their further verbal representation and introduction into the emerging system of new elements presented the most complicated questions for linguistic science in general and for terminology in particular. The creation of terminological systems consistent and adequate to a particular area of the information and knowledge continuum with regards to their complex impact on the whole society is a paramount task.

## **3. Research Questions**

The main issue considered in the framework of the analysis is the cognitive mechanisms of verbal representation of new knowledge components in the text space, as well as the methods of adequate expression in the most effective term that meets not only the criteria of accuracy and unambiguity, but also allows to level the subject-object asymmetry about the production of an associates cluster in the emerging term system.

## **4. Purpose of the Study**

The main purpose of this study is to define and analyze the stages of implementing knowledge components into the information space of a text, as well as to consider intentionality and episodic memory as primary factors and conditions for the formation of an adequate terminological meaning in a concept created and conceptualized within a certain terminological system.

## **5. Research Methods**

The knowledge components of both primary empirical verification and secondary objectification of information components are implemented based on the hermeneutic-noematic method with the inclusion of components of critical discourse analysis, clarifying the situational conditioning of episodic

components and ways of leveling the subject-object asymmetry in the interpretation of new generalized content and crystallizing new facets of the semantic hierarchy of a terminologized concept in assimilating intermediate areas of knowledge.

## 6. Findings

Presenting new knowledge in a textual format is extremely complicated not only by the absence of adequate units that unambiguously and accurately express mental constructions, but also by the permanent change of the verbalized and generated “internal” knowledge, i.e. the dual nature of the information-knowledge continuum itself. This term was introduced by Serebryakova in the framework of the study of spaces for the presentation of cognitive information and methods of its transmission both in primary and secondary scientific texts. It is understood as a kind of unified space of knowledge and communication (Serebryakova & Plohaya, 2018). The contaminated processes of constructing a special text of a separate subject area are distinguished by the phased formation of a conceptual apparatus, which is designed not only to most accurately convey the mental correlates of their units but also to serve as a potential basis for creating new associative clusters that enable the development of a particular theory or concept. The stages of a text space formation and, accordingly, a terminology system suitable for actualizing various nuances of an interpreted concept, and therefore for creating associative clusters in the process of further scientific understanding of the subject area, represent an organic unity of derivation, translation and interpretation: 1) understanding the problem area of analysis and consideration of empirically verified areas; 2) selection of up-to-date models of new knowledge verbalization; 3) identification of the most effective ways to actualize specific components of concepts by means of language; 4) determination on the basis of correction and reflexive verification of the verbalized concept adequacy; 5) implementation of action schemes for the de-objectification of actual meanings in the text space; 6) analysis of the derivative potential of the terminological concept amid the expansion of the associative clusters and new terminological systems.

Taking into account the fact that the last stage is designed to strengthen the position of new models for representing knowledge components, it is also the starting point for creating a new round of the hermeneutic spiral for the study of a particular phenomenon, which means that it causes the repetition of the rotational process, which is repeated again from the first stage. Thus, according to the just remark of Serebryakova and Plohaya (2018), the entire information-knowledge continuum in its dialogical unity cognition is a common space of meaning-generation and mental work carried out based on explicit and implicit information.

Verbalization of individual areas of the information-knowledge continuum is complicated by the multitude of correlations of mental and systemic spaces. By its very essence, each of the special sublanguages is not only the result of intentional reflection on the phenomena of objective reality but also an adequate tool of cognitive activity for operating with the phenomena of a particular field of knowledge. The processes of categorization and conceptualization of objective reality occur precisely within the framework of verbal assimilation (Kubryakova, 2009). Consequently, when analyzing the ways of representing knowledge components, it is necessary to take into account not only the cognitive mechanisms of the mental areas and their structure implementation but also the formal aspects of

linguistic representation, i.e. mutually directed processes of objectification and de-objectification of information-knowledge spaces.

The very awareness of the need for expression and translation of individual components of mental structures to a hypothetical addressee includes several preliminary operations (devotions). They are represented by the perception of an objective phenomenon, activation of its criterial characteristics “for oneself” (de-objectification), modification in the episodic space of interpretation and further search for objectifying possibilities and translation in the information flow (Stillings et al., 1998). And in the case of repetition of such operations in relation to a reflexive phenomenon, i.e. awareness of the need to re-express the knowledge component already objectified in the pro-statement can be interpreted as a kind of operation for calculating and interpreting the information flow (Alimuradov, 2010).

Thus, the mutual overflow of information and knowledge components is carried out within the framework of verbalization. As Ursul (2010) points out, the information flow as a verbalized representation of reflexive phenomena can be characterized not only by the property of reflecting objective reality but also by the variability (diversity) of its interpretative aspects. The same criterion for the multiplicity of interpretative options is also emphasized by Brillouin (1960), for whom information is described by the direct function of “the ratio of the number of possible answers before and after (receiving a message)” (p. 62). Accuracy and unambiguity, trying to minimize interpretative variability, which corresponds to the explication of a highly specialized area of the information-knowledge continuum, should be fixed precisely in the concepts that enable to predict the further development of this area (Ursul, 2010).

This informative component of the information-knowledge continuum transmission has the features of a uniform, integral and formal presentation, i.e. regardless of the variability of the content of a particular area, the methods of verbalization are often versatile. This formal informational component ensures the formation of a single divided space of understanding. The plan of expression (ways of objectifying knowledge components) is unified. And this applies not only to the lexical and syntactic aspects of the academic style but also to the immanently inherent schemes of argumentation, intensification and actualization of abstractness and universality. These unified models of knowledge components objectification in linguistic structures enable to interpret cognitive processes precisely as a set of operations for the perception, interpretation and further transmission of information. At the same time, the initial “prediction” being the result of constant modifications can lead to new concepts that embody the “movement of thought” and are able to find verbalization in new linguistic constructions that no longer meet the requirements of empirical verification but must meet the criteria for reflexive verification (Ursul, 2010). This process, objectifying knowledge components in the matter of language, legitimizes, disavows or concretizes this or that information model of reality, created in a certain part of the information-knowledge continuum.

Each of the stages of the formation of a text as an objectified reflection designed to explicate a certain part of the information-knowledge continuum containing a lot of judgments and formed on the basis of both knowledge and informational predictions are characterized by intentionality and meaningfulness. In the verbalization process, the leading role is played by intention. As Searle (1983) has repeatedly emphasized, endowing a certain phenomenon with the meanings being potentially cognizable

and capable of translating is always associated with the so-called meaning intention. The constant of intentionality rather significant in generating a new content of a concept and a tool for comprehending objective reality and interpreting textual space is also indicated in the works of Bredikhin (2015) along with subjectivity and modality. The totality of the implementation in the linguistic representation of these constants generates not only the maximum possible text in terms of adequacy to the mental content but also makes it possible to implement “schemes of action” into it for further de-objectification by the recipient, which ultimately creates a single space of understanding.

Distinguishing this intention to introduce personal knowledge components in the text with the help of linguistic units of various levels seems to be a fundamental principle, both in cognitive linguistics and linguophilosophy. We believe that the cognitive understanding of this principle is broader. The communicative-communicating system itself, i.e. language and agents of communication with their reflexive spaces striving for expression, already indicates the ways to optimize the position of a particular area in the entire information-knowledge continuum and the system itself in a number of other systems. Thus, an intermediate terminological system, containing borrowed terminology units in a new context, occupies a certain place among other terminological systems due to the intention of its creation and positioning. At the same time, it should be recognized that such a consideration requires the classical Maturana’s assumption about the variability of interpretation and the adequacy of objective and reflexive realities available for cognition and further transmission, which is rooted in the biological concept of cognition itself (Maturana & Poerksen, 2004). Regardless of the anthropocentricity of cognitive processes, the cognizing person, in contrast to the reflecting person (*homo reflectibus*) (Bredikhin, 2015), is always faced with the paradoxes of cognition and understanding based on the fundamental concealment of some aspects of the studied and described phenomenon. These shady areas of the information-knowledge continuum strive to highlight, realize and broadcast a highly specialized border text created on the basis of intentional active reflection, de-objectifying and re-objectifying all the hypostases of the phenomenon under study. This representation of the knowledge component in the text space does not strive to absolutize autopoiesis (self-regulation) in the stereotypical and reference understanding but provides both subjective and objective meaningfulness of the concepts being verbalized.

These postulates are significant for cases when knowledge not of direct human experience but of the information components is verbalized. The latter are nevertheless in their individual and episodic components not purely transparent to the recipient despite the preliminary linguistic representation. In this case, the semantic understanding turns out to be ineffective (Bogin, 1993) because the analysis of only linguistic forms does not provide access to all possible meanings. This corresponds to Maturana’s idea that having once received empirical verification the inaccessibility of someone’s knowledge is expressed precisely to a certain degree of inadequacy of modeling the perceived area of the information-knowledge continuum. Thus, with a semantic understanding, only the subjective principle is possible in comparing the knowledge components available to the recipient with the perceived ones, and this implies the constant formation of relative, subjective systems (Glybin, 2006).

The subjectivity of the system of understanding and translation of knowledge perceived only from the information flow raises the question of the objectivity of its further re-expression and translation, as well as the adequacy of the stereotypical modeling of the information-knowledge continuum areas. Based

on this doubt, it is possible to raise the question of the adequacy of this or that worldview regardless of the linguistic culture of functioning. The presence of variable and competing systems for the implementation of knowledge components can be explained in the original ones, which were formulated by Yume (1967) as follows: provided that words are a reflection of ideas, then how the speaker can be sure that the ideas of the listener coincide with his own ones. This is how the methodological paradox of verbal explication of the components of the information-knowledge continuum is born.

The intensification of the personal in refraction through the semantic provides great possibilities for overcoming this paradox; the foundations for the study of this type of mental structures verbalization were laid at the end of the 20th century in the work of Lakoff and Johnson (1999) “Philosophy in the Flesh”, which was the starting point of biocognitivism of a new format. The key postulate of this approach, along with intentionality, is representability, i.e. objectivity of information components. Their de-objectivity in consciousness is not questioned because otherwise the basic function of information cannot be realized. The representability of knowledge components obtained on the basis of empiricism and reflection is based on the mandatory presence of a coding system, which is a material superstructure over the ideal basis of the reflective world (Stillings et al., 1998). Natural language with its units of a sign nature, rules for the regulation of combinable potencies (syntactics in the broad sense) is such a coding system for the banal transmission of noematic (unconscious and undirected) reflection. Difficulties arise when this system is unable to ensure the repeatability of such components of reflexive reality, which are complicated by subject-object asymmetry. Various metalanguages function as such an encoding system, in which the semantic interpretation of not only complex but even elementary signs created for solving special problems of the system, is not always adequate to the laws of compositional semantics and non-variational algorithms.

The processes of generation, use, translation of new knowledge components are objectified in the form of a highly specialized text space built on the basis of action schemes designed to facilitate the process of de-objectification of actual components to other agents of discourse. Such codes can be disobjectified on the basis of two principles: 1) within the framework of explaining the meaning of the verbalizer, then rather expatiative, descriptive terms are obtained; 2) in the process of forming a metalanguage expression, creating a secondary objectification of information components with a clarification of the generation structure. It is obvious that modifications of meaning occur precisely on the basis of the second type of implementation of an individual understanding of certain components of the information-knowledge continuum.

## **7. Conclusion**

Thus, we can conclude that the formation stages of the information space for the implementation of knowledge components in the process of understanding a specific subject area represent an organic unity of derivation, translation and interpretation. There are six stages of verbal implementation 1) understanding the problem area of analysis and consideration of empirically verified areas; 2) selection of up-to-date models of new knowledge verbalization; 3) identification of the most effective ways to actualize specific components of concepts by means of language; 4) determination on the basis of correction and reflexive verification of the verbalized concept adequacy; 5) implementation of action

schemes for the de-objectification of actual meanings in the text space; 6) analysis of the derivative potential of the terminological concept in the aspect of expanding the associative clusters and new terminological systems.

First of all, it should be pointed out that it is necessary to implement semantic (generally accepted models of terminology) in a transdisciplinary verbalizer of a new knowledge component contextually conditioned by episodic components in the formation of open intermediate terminological systems to ensure an adequate interpretation of the concept by other agents of discourse.

The main vectors of implementing various components into the process of transdisciplinary borrowing of the terminologized nomen are mechanisms that are semantic-contextual in nature. They take into account the processes of objectification and formantization of mental concepts in a language based on semantic memory, enabling to include the largest number of possible options for explaining the result of superimposing objectified thought on an actual thought in the generalized content of the term of the intermediate system at the intentional level.

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