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Ontological Basis of Knowledge in the Theory of Discursive Space and Its Consequences †

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Abstract: The subject of the paper is a description of how discursive space exists as a space of knowledge. The paper assumes that discourses as retention and articulation of knowledge travel across a multidimensional space, the dimensions of which determine knowledge (i.e., its contents). In this way, discourse achieves the status of a (dynamic) unit of knowledge that is autonomous. Discursive space exists as the realization of the world of affairs (the world of facts by Wittgenstein). Because of the holistic nature of the world so defined, it contains everything, and thus also various discourses and various discursive spaces.

Keywords: knowledge; language; natural language processing; discourse; discursive space; dynamical space; manifold

1. Introduction

Language is subject to a very extensive and multifaceted reflection. This paper is based on the assumption of at least two main research approaches to this phenomenon: a pragmatic approach, mainly of a technical nature, and a theoretical approach, mainly philosophical and social. This distinction is the effect of the development of information technology during the last decades. Although language is much older as a subject of reflection, the second half of the twentieth century brought a sharp change in the way language has been perceived. One can, therefore, risk the claim that both sides of the mentioned distinction are subject to a certain symmetry. Both of the approaches also have a distinctive methodological character: the first is primarily quantitative, the second is qualitative.

The idea of discursive space presented here, which by definition operates on a higher level of abstraction, intends to transcend this dualism. It is based on the concept of an ontology of the world proposed by Wittgenstein [1] and Armstrong [2]. Thanks to that concept, the ontological unification is possible, which gives the basis for reinterpreting the idea of discourse, which as an autonomous phenomenon of retention and articulation of knowledge can be at the same time a part of this world and representation of its selected fragment [3,4].

The idea presented here boils down to intentional separation of the deep semantic content identified with knowledge from the level of its linguistic representation. It is based on a descriptive construction of the discursive space [3–5], but it considerably extends its original application, going beyond the source area of the social context introduced by the classical concept of discourse. This concept was based on the theory presented by M. Foucault in an orderly form in his lecture in 1970 [6] and developed extensively in other works (1969, [7]), (1966, [8]).

The original idea of discourse in the discursive space theory was based on the repeatedly stated belief that discourse functions as articulation/retention of knowledge, which is very broadly supported in literature. This belief is based on the idea of Foucault and puts itself in the field of qualitative research. Foucault defines it through indicating four principles that trace the pursuit of

describing the discourse: reversal, discontinuity, specificity, and exteriority due to some elusiveness of the discourse itself resulting directly from the fact that "discourse is annulled in its reality and put at the disposal of the signifier" [6] (p. 66). Foucault demands a fight against the idea of its universal and stable character in favor of its mobility and temporariness: "discourse is little more than the gleaming of truth in the process of being born to its own gaze" [6] (p. 66). At the same time, Foucault clearly emphasizes that the signifier is something different than reality. Such distinction, although not developed in the text, underlines a difference in the way real things and discourse exist.

In this paper, the development and generalization of the original idea of the discursive space are carried out through two fundamental analyses. The first is an analysis of the linguistic context (i.e., the analysis of the way of the existence of discourse and out of necessity the analysis of the world existence), and the second one is the analysis of the observer's way of existence. The first analysis is a natural consequence of the fact that language is the main, real entity representing discourse as well as knowledge. The second analysis is based on an uncontroversial, classical assumption that knowledge is constructivist in nature (i.e., exists for some observer).

A serious analytical problem is the fact that language has an extremely wide and diverse theoretical background. It can be understood in particular as a kind of intermediary between discourse and the world, and its mode of existence is described by an opposition between the signifier and signified. On the one hand, language is a real entity, while on the other language is a representation of another real entity (this could be also diversely interpreted). This opposition is described in an extensive field investigating the issue of the sign: semiotics. Of course, semantics is also essential to semiotic. Semantics, in turn, is based on logic, etc. All these example fields enter into various relationships also in the context of information technologies solutions, which is extensively described by Sowa in the context of the so-called ontologies [9]. It is assumed here that language, semantics, and knowledge can be understood in particular as phenomena and fields of investigation which are mutually interdependent, and even form a kind of ontological and epistemological hierarchy. Language is further understood here as an artifact that is closest to the level of reality: it exists as words, sentences, etc., and represents the lowest level of abstraction.

Despite the appearances of a certain naivety in such a language approach, which can also be understood more generally and holistically, it has a significant practical meaning in the area of language analysis and processing carried out using IT tools such as text mining or natural language processing.

2. Results

The original idea of discursive space assumes that discourses are changeable over time phenomena that represents the world in the process of supervenience [2,4], creating a multidimensional dynamical space for various discourses that traverse it in time [4,5]. However, further analysis of the consequences resulting from the interpretation of the way the world exists in the context of discourse leads to the necessity of assuming numerous independent spaces of knowledge that are local and valid only within the isolated parts of the world of facts. These spaces of knowledge are reflected in discourses which are a representation/articulation of this knowledge, and which are also local and specific (i.e., they concern selected areas of the world).

Thanks to this topographic separation, the discourse appears a separate unit of knowledge. This isolation appears spontaneously and does not prejudge the way the discourse exists, but is based on the relationship it creates with the world. This approach is based on an ontological analysis, in which is the holistic concept of the world of facts introduced by Wittgenstein [1] (p. 5) and developed by Armstrong [2] (p. 1). Thanks to this concept, the ontological unification of the world can be achieved, which covers all phenomena, including knowledge, discourse, and others (e.g., information). Supervenience relation introduced by Armstrong is recognized as the consequent way the world and the discourse related to each other. Its presence leads to the conclusion that discursive space must inherit the uncontroversial complexity of the world.

The second necessary condition for the validation of that described here, the expanded idea of discursive space, is the introduction of an extended concept of an observer. The starting point is the

observer idea assumed in the description of Burgin allowing any abstract system to be it [10] (p. 83). Burgin's idea is related to the opposition of the observer and the world, which is philosophically very old concept. An example can be the famous analysis made by Descartes in A Discourse on the Method in 1637.

According to the interpretation adopted here, the observer becomes an observer only because it comes into the relationship with the world of facts (i.e., observes it), not because of any special features it might have. What is more, the observer is also a part of the world of facts on par with other parts of it, which is obvious due to the ontological unification. Due to the unlimited number of such observers the discursive space could be understood as a multiplicity of areas of articulation/retention of knowledge in the discourse existing for various observers or just a plurality of such discursive spaces. This is a significant modification that leads to further, serious conclusions related to the need to reformulate other phenomena (e.g., information) [3]. One of the most important such conclusions is that actually one deals globally with the manifold, which realizes locally as discursive spaces.

The mentioned ontological unification as well as the enlargement of the observer understanding, which are the basis of the discursive space consequently introduces the possibility of extending the idea of discourse (and knowledge) also to non-social circumstances. Thus, it allows one to understand discourse as a universal unit of knowledge whose real representation may be, among others, natural language, as it is in the case of discourse understood as a social phenomenon. However, broadening the understanding of discourse to other systems that can act as an observer, as well as recognizing the world of facts as common and unique for all processes, introduces the possibility of other realizations (materialization) of the discourse, appropriate for the environment in which the act of articulation/retention of knowledge happens. Due to the ontological unification, this environment has no limitations, and the implementation (materialization) of the discourse should admit any kind of character (e.g., chemical sequence, physical variables chain, etc.).

The structure of discourse proposed here assumes the existence of the level of semantic relationships of the higher level (i.e., knowledge). These semantic relations have a phenomenal form of words or sentences in the case of discourse, and ultimately materialize as signs (symbols); that is, they must obtain a syntactic and, finally, a semiotic realization. Assuming the hierarchy figure, where the level of semiotics is at the bottom, the syntax level is higher, the level of semantics is above syntax, and the level of knowledge is highest, the proposed approach has top-down character in opposition to the currently most common bottom-up approach regarding the IT field. It complements the level of knowledge with the interpretation, which can be called morphological, that is, it concerns the relation of its individual, numerous and variable components (i.e., discourses and the world (of facts)).

3. Discussion

The idea of discursive space can be understood as an analogy to the idea of the universe of discourse of Morgan/Boole [11] in the sense that it designs some closed, internally coherent and countless spaces of discourse. However, in the case of natural language, a potentially infinite collection of such spaces is created on the body of the language in a completely arbitrary way, intersecting, incoherent and even contradictory internally. This is obviously the great and old problem for the IT practice, with many trial solutions also in the area of latest attempts (e.g., [12]).

One can also formulate the allegation that current analysis confuses distinguishing the subject of the investigation and the language of the investigation which is the classical problem described and resolved by Tarski [13]. Because discursive space is of a holistic nature, it is based on an unlimited natural language, which means that this language is universal in the sense of Tarski. Hence, discursive space in principle must contradict the demands of Tarski, which allows avoiding aporias and paradoxes. What is more, it is not possible to determine any predominant logical order of the discursive space due to its complexity. For this reason, discursive space does not guarantee or manage this kind of semantics. It can be said that discursive space is ultimately a non-logical character and contradicts the famous thesis of Montague [14]. What is more, the task of construction,

which is the discursive space, is to preserve the whole diversity of knowledge that is realized in language, which means rejecting any limitations and simplifications. It is an approach based principally on a different epistemic paradigm, based on the idea of complexity. This last idea and its application in the theory of discursive space have been extensively discussed in earlier papers [3–5].

The solution to the presented dilemmas offered by discursive space consists in referring to an instance of knowledge of a higher level that is purely semantic in nature and is in no way associated with its phenomenal (e.g., material) implementation. Phenomenological freedom is accompanied by structural freedom, which puts the problem of defining sensibility as such. Meaning does not have to be equated with logical correctness. Even more: contradiction or logical inconsistency may be a deliberate act, which often happens, for example, in poetry, producing unexpected but truly semantic relationships. Even the famous sentence by Chomsky: "colorless green ideas sleep furiously" (1957, [15]) (p. 15) couldn't be regarded as meaningless as the author wanted since its meaning is actually the image of the lack of meaning. The meaning, in this case, depends on the level of comprehension. There is also no possibility for the total lack of the meaning as long as an observer of any kind exists. Meaning is here understood as the basis of pragmatic knowledge which delivers the structure for these meanings as an unlimited set of discourses traversing the dynamical space called the discursive space. This interpretation could be expanded to any other situation where the fundamentally understood observer entity appears.

The creation of sense in the text is the subject of extremely difficult and sophisticated analysis, as evidenced by such types of approach as hermeneutics or deconstruction, led by such philosophers as Martin Heidegger, Hans-Georg Gadamer or Jacques Derrida. This reflection developed rapidly in the 20th century. Interpretation of the phenomenon of so-called ordinary language has been particularly developed by John Longshaw Austin [16]. This reflection opened the wide field of research on language of an epistemological and social kind. Searle describes the idea of Austin thus: "he thought we could learn a great deal about the world by analyzing the expressions we use to describe the world" [17] (p. 222). It doesn't open the analysis of the syntax but the very meticulous analysis of the sophisticated way the language interacts with the world Gadamer described: "that which comes into language is not something that is pregiven before language; rather, the word gives it its own determinateness." [18] (p. 470). In particular the discursive space could be understood as a model of this "determinateness".

Text, however, remains undoubtedly the basic phenomenal form of language implementation in the semantic context, which appears in accordance both in the cited philosophical tradition and modern IT implementations. The internal inconsistency of a universal language is indeed the biggest problem of both approaches and is often interpreted as "a problem of ambiguity" in the field of practical IT realizations (e.g., [19]), as well as theoretical reflection (e.g., [20]). However, it should not be treated as a simple obstacle, but rather the realization of a certain fundamental property, which Tarski described succinctly. This intention, precisely "to provide adequate facilities for expressing everything that can be expressed at all" [13] (p. 67), is crucial for the role that (universal) language plays in the context of knowledge. Hence the conclusion that any proceedings violating this property strike at the essence of the language, what can be understood as its effective limitation, seems to be obvious. Thus, these proceedings are undertaken due to the impossibility to resolve the complexity of language become the key point and demand careful investigation and control. This requires the creation of a platform of a higher level of semantic reflection at the level of knowledge. The diversity of discursive spaces as an environment of abstract, semantic objects (i.e., discourses) is assumed here to meet such a requirement.

4. Conclusions

This paper justifies the ontological foundations of the theory of the discursive space. It proposes the strict interpretation of the ontological structure of the world, the entity of the observer and the discursive space. Such assumptions derive the circumstances and the dynamics of the knowledge phenomenon, which is identified as a separate entity called here a discourse. Such a discourse is the

form of the retention and articulation of knowledge, which is originally the social product, meaning that it varies depending on social circumstances.

This construction could be extended to any other possible relations occurring between the other than discourse entity and the world but fulfilling the supervenience relationship demands, although the basic field of the investigation remains the language manifested by the text. This fact reveals the connection between the presented idea of the discursive space and the text manipulation undertaken in the same context appearing in the information technology field (natural language processing). The proposed ontological unification also causes the necessity of extending the construction of space to the construction of manifold.

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