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On the Categorial Nature of the Generic Concept of Information

1. Introduction

Remarkable scientific advancements have impacted all aspects of societal life since the latter half of the 20th century. The volume of information produced at various levels and from diverse sources is concurrently elevating the significance of enhancing reliable methods for its encoding, structuring, storage, transformation, and transmission. This progress originates from a series of foundational discoveries in physics and mathematics at the start of the last century, which catalyzed substantial advancements in the engineering sciences and subsequently in numerous applied sciences that use their technological innovations. These conditions attract serious attention to the essence of information, captivating the interest of numerous researchers across various disciplines.

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2. Studies on the subject

The term information possesses varied interpretations across disciplines such as cybernetics, informatics, physics, biology, geography, philosophy, psychology, economics, law, and mass media. Research on the nature and properties of information, along with efforts to define the concept, has a long history dating back to the late 1920s within the engineering sciences (Hartley, 1928; Nyquist, 1924; Shannon, 1948a, 1948b; Wiener, 1948, as cited in Mazur, 1970, pp. 15–19; Хартли, 1959), with heightened interest particularly from the 1960s to the present.

This discussion will not encompass the extensive literature on the essence of information; instead, it will focus on a select few works, primarily from the engineering sciences and philosophy. This will serve to illustrate the diverse approaches to this concept and the varied conclusions reached by scientists from different disciplines in their efforts to elucidate its nature.

In the introduction of his book "Jakościowa teoria informacji" [Qualitative Theory of Information], M. Mazur examines the perspectives of several esteemed researchers regarding the concept of information. Mazur meticulously examines the methodological challenges of its definition, critiques its erroneous conflation with the concept of information quantity, and analyzes efforts to define related concepts such as *news* and *message* (Mazur, 1970, pp. 13–26). The author analyzes the concept of information, its components and types, and provides a classification of various information processes.

The essence of information is also important in the development of radio-technical systems for message transmission and the differentiation of signals from random disturbances (background noise). A way to determine values for *information capacity* and *information density* was discovered by V. A. Kotel′nikov (Котельников, 1933, as cited in Хургин, 2007, p. 8).[1]

There are two primary approaches to researching the concept of information: attributive and functional. The first approach posits that information is an inherent property of all material objects, regardless of the level of generalization. In contrast, the second approach asserts that information is a property exclusive to highly organized

[1] Which, however, refer to the amount of information, that can be recorded on a medium, i.e., they refer to the medium of information.

matter: we can only discuss information when data or messages are transmitted between people, or between people and machines. This excludes transmission between cells in organisms or in nonorganic nature. Most researchers studying this concept can be categorized as adopting one of these two approaches.

According to M. K. Bocharov, it is not information per se that should be viewed as an attribute of matter but rather its content, which must be extracted and expressed in a specific form. The *content of information* encompasses data and reports regarding objects and phenomena in reality, and the *form* of its existence and transmission is a system of signs and signals (Бочаров, 1967, as cited in Хургин, 2007, p. 8).

Assuming that when examining an element of reality, attention is solely directed towards one of its properties, while all others are disregarded, K. K. Kolin attributes information to the immaterial properties of objects (Колин, 2013, pp. 75–76).

The philosophy of information emerged at the turn of the 21st century. Despite the extensive body of work on the nature of the concept of information up to that point, its ontological status remains an unresolved issue. Consequently, L. Floridi proposes for consideration the notion that information constitutes a distinct ontological category, placing it on a par with the physical (material) and the mental (Floridi, 2004, pp. 572–573).

V. M. Khurgin also associates the perception of information as a fundamental essence of the surrounding world and classifies it alongside matter and energy.[2] His study provides a comprehensive analysis of a collection of works regarding nature and various properties of the concept of information, as defined by the field of knowledge in which it operates. Nonetheless, akin to numerous other scholars across various disciplines, and following an examination of multiple perspectives regarding the essence of this concept, he underscores that researchers remain significantly distant from its satisfactory elucidation (Хургин, 2007).

E. A. Kolmakova and E. A. Tsvetukhina examine the significance of the perspective from which the concept of information is analyzed. They concur that it is an attribute, a characteristic of all material objects. Authors concurrently assert that knowledge consists of structured, systematized information; however, irrespective of whether this structuring and systematization is executed by

[2] This idea, in our opinion, is in contradiction with the mentioned view (Хургин, 2007, p. 11) that information is a result of the process of cognition, intellectual work, etc., that is, i.e., it is an object and a product only of the human activity, which is closer to the functional approach of its understanding.

humans or machines, knowledge remains exclusively a human attribute. These authors also contest the perspective of certain scientists who assert that, due to the many definitions of the concept tailored to specific research objectives, there is nothing substantive behind it. These authors understand information as "a key immaterial element of reality, positioned alongside material components: matter and field (energy)" (Колмакова & Цветухина, 2016, p. 119).

E. A. Petrichenko analyzes information in relation to the dialectical philosophical categories of essence and phenomenon. He associates it with the category of phenomena due to its connection to human consciousness, wherein it is perceived, expressed, and transformed (Петриченко, 2014, p. 2). The author focuses on the attributive and functional methodologies in the examination of information, noting their shared foundation in perceiving it as an objective characteristic of matter, specifically as a reflection (Петриченко, 2014, p. 4). He opposes his interpretation of information as a construct of human consciousness with the view that it is a characteristic of matter in general (Петриченко, 2014, p. 4). The author asserts that notable technological advancements should enhance information processes; however, they merely refine the presentation methods, neglecting the essential content. Emphasizing technical means and the form of information does not contribute to the reliability of its content (Петриченко, 2014, pp. 7–8). He asserts that analyzing the concept in relation to the philosophical categories of form and content may further clarify its essence.

3. Observations regarding the referenced studies

Concerning the objective of the study, namely the identification of the logical status of the generic concept of information, that is to say its categorical affiliation (to attributive or entitative meanings; to ontological or constructed categories), the perspectives of the authors can be categorized as follows:

a. the understanding of information as an entity

The views of M. Mazur, J. Janowski, and W. Gogołek all fall within this category. M. Mazur's note that the concept should not be equated with the *amount of information* points to the understanding that information has similar properties to substance. The interpretation of information as 'a sequence of bits'[3] by

[3] Where bits are understood as immaterial objects.

J. Janowski and as 'a nonmaterial agent' by W. Gogołek also point to an *entity* rather than a *property* or *phenomenon*.[4]

Chapter 2 of the article on information in the "Stanford Encyclopedia of Philosophy" ("Information", 2023) also reveals two interpretations: 1. attributive – as a process, action, i.e., the establishing of something in a particular form; 2. entitative – the outcome of this action, i.e., an entity that is established in a specific form.

b. the understanding of information as a feature/characteristic

The perspective of K. K. Kolin is that information belongs to the immaterial properties of objects in reality. The understanding of E. A. Petrichenko is not completely consistent, since on one hand he perceives it as an objective property of matter (a reflection) and assigns it to the category of phenomena; on the other hand, he claims that it is a product of human consciousness (i.e., a nonmaterial object entity) and discusses its content and form (which again refer to entitative categories).

c. the understanding of information as a separate ontological category

Information is understood as a separate ontological category by L. Floridi, who situates it alongside the physical/material and the mental, and by E. A. Kolmakova & E. A. Tsvetukhina, who view it as an immaterial part of reality (on the same level as substance and field).

d. the understanding of information as a constructed category

The view of M. K. Bocharov is closest to our perspective. This author claims that information per se is not an attribute of matter, and only its content and form can be viewed as one. This, albeit implicitly, pertains to the comprehension of information as a theoretical category.

It is important to note that the authors of the mentioned works elucidate the meaning and characteristics of the term information as employed in various scientific fields[5]. It is understandable if they fail to recognize that, in distinct instances, different concepts are involved, each defined by varying scope and

[4] The views of J. Janowski and W. Gogołek are presented in part 5, providing definitions and features of the concepts of information in the separate scientific domains.

[5] For example, V. M. Khurgin (Хургин, 2007) as a representative of the engineering sciences adduces details about the views on the concept of information in cybernetics, physics, bioinformatics, philosophy, economy, law, archival science, mass media, etc. For their part L. Floridi (2004), E. A. Petrichenko (Петриченко, 2014), E. A. Kolmakova & E. A. Tsvetukhina (Колмакова & Цветухина, 2016) and K. K. Kolin (Колин, 2013) also cite data about the understanding of the concept at the same time in the humanities, and in the natural, social and engineering sciences.

content, which operate within their respective scientific domains. This mixing or confusion is frequently observed when an asymmetry of the type 'one denoted object – one name – two or more meanings' is recognized, particularly when distinct features of the denoted object are emphasized in separate scientific domains.

This distinction can be illustrated by the well-known example of the word "water": 1) in general language, it refers to a "transparent, colorless liquid that is tasteless and odorless"; 2) in chemistry, it denotes an "inorganic compound whose molecule comprises two hydrogen atoms and one oxygen atom, bonded covalently"; 3) from the perspective of physics, the values of the features "state of matter", "density", "hardness", "boiling point", etc. are significant; 4) in biology, it is crucial for its role in cellular structure and maintenance of the cell wall, as well as its functions as a solvent and carrier of chemical substances, and in thermoregulation; 5) various other properties of water are pertinent to physical geography.

Although all cases denote the same entity, distinct scientific domains examine different properties of it, through which it engages in various processes (biological, physical, chemical, etc.).

4. Theoretical framework of the research

The term information, which operates with distinct meanings across various scientific disciplines, cannot be regarded as having a singular denotation, as is the case with water.

Here, we accept that concepts of information across various fields, including biology, physics, philosophy, engineering, jurisprudence, and mass media, are specific concepts[6] that share a common generic concept, and it is this concept that is the subject of attention of the current research. It could be confirmed that the various meanings of the term in specific fields have a common foundation where they intersect and align with one another. Our aim is to focus on this foundation, particularly on the logical status (attributive or entitative; ontological or constructed) of the archiseme of the generic concept of informa-

[6] Which from a logical point of view are in a relation of intersection, while from a classificational point of view are in a relation between species, co-subordinated to a common genus.

tion, irrespective of whether this status is explicitly articulated in its definitions across various fields of knowledge.

Although most of the mentioned studies consider the concept of information without explicitly defining it,[7] our objective here is not to provide a definition.

The current study researches the generic concept of information. In seeking to understand its nature, we depend on the attributes that define its specific sub-concepts (in informatics, biology, philosophy, etc.). The study does not aim to formulate a definition of the concept in any of the applicable fields. Instead, it will discuss the fundamental nature of the generic concept of information in relation to the structural classification of conceptual-semantic categories introduced by M. Popova (Попова, 2001–2002). According to this classification, we will examine its nature (entitative or attributive) and its possible belonging to ontological or constructed categories/meanings.

In order to explain the meta-terms employed in this study, we will briefly present the essence, content, and principles underlying the construction of this classification.

The structural typology of conceptual-semantic categories of terminology, developed by M. Popova (Попова, 2001–2002), offers significant material for reflection, as well as instruments for the examination of various concepts. This typology represents a logical classification (established on the basis of diverse characteristics) as opposed to a natural classification (established on the principle of addition).[8] This approach resulted in the creation of an orderly, logically grounded, and highly structured system of concepts, with elements distributed across several successively descending levels of abstraction. The groups of ontological and constructed categories are located at the highest level and are distinguished on the basis of the feature [±existence in reality]. At the next level, the ontological categories (meanings) are classified into entitative and attributive on the basis of the characteristic [±autonomy of existence]. This feature also divides constructed categories into theoretical and operational ones (corresponding to the ontological entitative and attributive categories, but existing in human thinking, in scientific theory, rather than reality). Further, based on additional suitably chosen features, specific types and subtypes of

[7] It is not defined even in the extensive article about information in the Stanford encyclopedia of philosophy, which contains summarized essential data from studies on the topic, carried out in a number of mostly engineering and other scientific fields.

[8] According to the understanding of A. Shaĭkevich (Шайкевич, 1980, pp. 320–323).

meanings are situated within the group of ontological categories (*entitative*: 'person', 'plant', 'animal', 'object', 'substance', 'place', 'cultural or intellectual work', etc.; *attributive*: 'property', 'physical characteristic of an object', 'mental characteristic of a subject', 'quantity', 'action', 'activity', 'function', 'purpose', 'state', etc.).

Certain elements contributing to the development of such a classification emerge in the analyses of various terminologists regarding conceptual-semantic categories (e.g., Dahlberg, 1992, p. 68; Канделаки, 1970, p. 38, 1977, pp. 9–10, 27; Лотте, 1961, pp. 90–91). In these typologies, however, the elements are not organized hierarchically, and their presence is not backed up by argumentation.[9]

Two significant points should be made. Initially, considering the available sources, we are unaware of any such comprehensive, logically organized, and well-reasoned classification of conceptual-semantic categories. Secondly, we are unaware of any classification that has acknowledged the existence of constructed categories (comprising their two varieties – theoretical and operational) and has differentiated them from ontological categories in any manner.[10]

In this study, entitative categories/meanings must be comprehended as material or immaterial objects that exist in reality (pertaining to ontological categories) or in the human mind (pertaining to constructed categories). Attributive categories/meanings refer to those that lack autonomous existence and consistently manifest alongside an object, denoting its properties or actions.

In addition to the previously discussed typology of conceptual-semantic categories, this research is also grounded in the view, widely accepted among terminologists, that a term's meaning is encapsulated in its definition. The categorial affiliation of the generic concept of information relies on the characteristics that define its specific concepts, which operate within general language and various scientific disciplines. In analyzing the discussed concept from various perspectives, we employ component analysis and the procedure for deconstructing the meaning of L. Ė. Pshenichnaia (Пшеничная, 1967), along with the case grammar method.

[9] For more details about the classifications of conceptual-semantic categories' classifications by D. S. Lotte, T. L. Kandelaki, I. Dahlberg and other researchers, see in M. Popova (Попова, 2001–2002, 2012, pp. 133–139).

[10] Indeed, in the methodology and philosophy of science, observable and unobservable objects are distinguished and defined, respectively, as empirical and theoretical, but; however, in our opinion, they are also not appropriately described and combined.

5. Definitions and characteristics of the concept of information across distinct scientific disciplines

It is noteworthy that the studies referenced above, as well as numerous others not cited here, lack definitions of the concept in question. That is not to say that there are no definitions of the concept of information, for example:

a. information in cybernetics

Information in cybernetics refers to "all external data detectable within a specific system, including environmental influences on organisms, knowledge gained through human learning, data within digital machines, and signals transmitted across networks" (Mikułowski-Pomorski, 1988, p. 45, as cited in Janowski, 2009, p. 79). According to another definition, it is "a signal that stimulates to action" (Janowski, 2009, p. 83).

b. information in informatics

Information is defined in informatics as "a sequence of bits, presented by signs" (Janowski, 2009, p. 83). According to another definition, it is "any immaterial agent that can enhance the operational efficacy of individuals, organizations, and machines" (Gogołek, 2007, as cited in Janowski, 2009, p. 79).

c. information in philosophy

In philosophy, information is defined as, for instance, "what is left of knowledge when one takes away belief, justification and truth" (Dunn, 2001, p. 423).

d. information in journalism

In journalism, information is defined as "the totality of data regarding (specific) situations, conditions, events, and individuals […] presented in written, audible, visual, and other forms that can be perceived by the senses" (Michalski, 1974, p. 10, as cited in Janowski, 2009, p. 79).

J. Taczkowska-Olszewska points out that "sometimes the same phenomena or fragments of reality can serve as a source of information for one individual, while having no informational value for another" (Taczkowska-Olszewska, 2014, p. 4). Indeed, the features of a concept that are of utmost significance for

a specific discipline are not reflected in its meaning and content across other domains of knowledge (e.g., 'amount of information' is crucial in empirical sciences but absent in philosophy; the distinction by '±truthfulness' is not relevant in physics, informatics, biology, etc.). That's why some authors suggest that the characteristics of the concept be reduced to those appliable across all domains. Consequently, the definition may be articulated as "transferable immaterial good, which reduces uncertainty" (Szpor, 2008, pp. 7–8, as cited in Taczkowska-Olszewska, 2014, p. 6). However, we argue that even characteristics that are considered universally suitable, such as 'immateriality', 'transferability', and 'free access', are not appliable in all fields. In biology for example, one could argue that information has a physical nature. Furthermore, the other two characteristics are inapplicable in instances involving certain 'classified' information and personal data.

e. information in general dictionaries

The "Oxford Learner's Dictionary" defines information as 'facts or details about somebody/something'. The lexeme 'fact', serving as the archiseme in this definition, appears in the same dictionary as 'a thing that is known to be true, especially when it can be proved' ("Information", n.d.).

The online edition of "Słownik języka polskiego" [Dictionary of the Polish language] defines the term *informacja* as 'to, co powiedziano lub napisano o kimś lub o czymś, także zakomunikowanie czegoś' ('something that is said or written about somebody or something, also communicating something') ("Informacja", n.d.).

Based on the data provided in the article regarding information in the "Большой толковый словарь русского языка" [Great Explanatory Dictionary of the Russian Language], we will present the following two definitions:

'содержание сообщения о состоянии дел где-либо, о каких-либо событиях, процессах и т.п.' ('content of a message about the state of affairs somewhere, about some events, processes, etc.') and 'сведения о признаках окружающего мира, его свойствах и протекающих в нём процессах, принимаемые, передаваемые и сохраняемые различными объектами, используемые для принятия решения, для взаимодействия, управления или для обучения' ('data, reports about features of the environment, its properties and processes going on in it that have been received, transmitted and stored by various objects, used for making decisions, for interactions, management or for training') ("Информация", n.d.-b). The second cited

meaning is closer to the interpretation of information as a whole, which refers at the same time to entitative (things, objects in reality) and attributive categories (properties of these objects and actions that are performed with/by them).

The views presented in the fourth specialized (terminological) definition of information in "Речник на българския език" lead in another direction, cf. 'основно понятие в кибернетиката, в така наречената теория на информацията, която се стреми да даде количествена характеристика за съдържанието на дадено съобщение' ('a basic concept in cybernetics used in information theory, used to quantify message content') ("Информация", n.d.-a). From this, it could be concluded that one of the characteristics of the generic concept of information is '(presence of some) content', which points to its entitative nature.

6. Views on the logical nature of the generic concept of information

We will focus here on some contradictory characteristics of the concept of information that stem from its analysis in various domains.

6.1. Attributive meaning

Regardless of whether we replace the word information with *message*, *news*, *data*, *details*, etc., it seems that all these concepts can be perceived as dependent, requiring clarification and relating to other concepts. This indicates that their nature is attributive.

It should be noticed that even if we assume that the discussed concept has a dependent characterizing role, its possible attributive nature is different from that of the other types of attributive meanings, cf. with 1) concepts expressing a property or feature of an object (e.g., *green*, *metallic*, *tall*, etc.); 2) concepts expressing action, activity, function, purpose, etc. (e.g., *to talk*, *to draw*, *to research*, *to calculate*, *to emit*, *to protect*, etc.); and 3) concepts expressing events (*war*, *coup*, *insurrection*, *revolution*, etc.), states (*alive*, *dead*, *sick*, *healthy*; *peace*, etc.) and phenomena (*earthquake*, *storm*, *rainfall*, *tide*, *aurora*, etc.).

6.2. Entitative meaning

On the other hand, some arguments can be put forward in support of the claim that the concept of information denotes certain immaterial entities. This view is supported by the concept's collocability at the lowest concrete level of abstraction (cf. receive information, transmit information, encode information, disseminate information, conceal information, etc.).

Comparison with other concepts, such as those denoting works of art or cultural and intellectual works from E. Pernishka's classification (Пернишка, 1993, p. 62), can serve as a basis for defining information as an immaterial entity, cf. "I sing a song", "I perform an aria", "I compose an opera", "I recite a poem", "I write a novel", "I tell a fairy tale", "I create a myth", "I transmit a legend", "I solve an equation", "I derive a formula". At the lowest level of abstraction, the nouns *a song*, *an aria*, *an opera*, *a poem, a novel*, *a fairy tale*, *a myth*, *a legend* can be classified as works of art, and *an equation*, *a formula* can be classified as written mathematical or physical dependencies with the help of which different quantities are calculated. However, at a higher level of abstraction, both groups of concepts can be defined as immaterial entities.

Having content is a defining component of the concept of information. This fact and some other features noted in the literature such as 'quantifiability', 'heterogeneity', 'structure', 'utility', etc., also support the view of its entitative nature.

In our view, the idea that information is a reflection[11] of facts (events or phenomena present in reality) also supports this claim.

6.3. A theoretical constructed category

Thirdly one can assume that information describes either some action of a subject, or some property/attribute/state of an object. In this sense, at the lowest level of generalization (if we consider specific examples), the concept is constructed with a certain combination of entitative and attributive meanings that represent the content of specific information, cf. "the minister has made a statement",

[11] It is understood as *a reflection*^{2} (e.g., a mirror image, i.e., a nonmaterial object) resulting from *a reflection*^{1} (the act of reflecting).

"the parliament has discussed such and such a bill", "it is raining", "I am reading a book", "I am picking cherries", "I made an omelet", "the grass is green", etc. Generally speaking, the specific content of a message or information falls within the scope of one of the following formulas: "something has happened", "someone has done something" and "something has some properties".

If we compare the assumed attributive character of the concept of information with the nature of the above-mentioned types of attributive categories (property or characteristic of an object; action, activity, function, purpose; event, state, phenomenon), it becomes clear that they differ significantly from each other. For example, the concepts of property or feature ("something has some properties") refer to an object, e.g., *green grass*, *hard water*, *glass cup*, *iron pillar*, *tall man*, *beautiful girl*. Concepts expressing states ("something is in some state") describe an object or a subject, e.g., *a living man, a healthy boy* and so on. Concepts expressing actions ("someone does something") are related to a subject or to a subject and an object, e.g., "*The child is laughing*", "*The squirrel is eating hazelnuts*", "*The man is building a house*", "*I read a book*" and so on.

In contrast to these groups of attributive categories, the words *information*, *message*, *report, news* on the one hand refer to a subject ("someone reports, says something"); on the other hand, they introduce an additional group of notions with entitative and attributive meaning. At a lower level of abstraction, any concretization of their content actually consists of a combination of entitative and attributive categories, cf.:

I have information that:	the delegation was received by the president.
	he is the father of the child.
	he has gone abroad.
	the municipality has announced a competition for one of its positions.

Or, expressed more schematically:

Someone reports that:	something happened.
	someone did something.
	something has some properties.

That is, the content of information represents a whole that consists of different types of concepts (both entitative and attributive).

The understanding of information as a combination of entitative and attributive meanings is also supported by some of E. A. Petrichenko's considerations

(although their purpose is different).[12] According to his view, when receiving information, we in fact receive some form of it (e.g., textual, visual, audible), but the essence of information consists in its content – some statements, conclusions, etc. Here the author perceives information as a whole made of form and content (Петриченко, 2014, pp. 5–6). This explanation also supports the view of the dual nature of information. Moreover, the content of information or of a message is not homogeneous but always consists of meanings that belong to two groups of concepts which do not intersect: entitative (things, objects in reality) and attributive (properties or actions).

If we accept the hypothesis that information is a complex whole made of entitative and attributive meanings, it should be viewed as a theoretical category. This understanding is closest to our own interpretation of information as an entity (not as a feature/property or an action), and more precisely an immaterial entity that exists not in reality but in human thinking (corresponding to the entitative ontological categories).

As is known from M. Popova's classification, theoretical categories are constructed (as opposed to the ontological ones), i.e., theoretical categories are distinguished by the characteristics [-existence in reality] and [+autonomy of existence]. The necessity to consider whether or not the combination of entitative and attributive meanings represents a kind of theoretical category results from the similarity of the concept of information with some members of the group of theoretical categories (such as sciences, schools of thought, movements, which, in our opinion, also represent a complex of entitative and attributive meanings).

The facts described in information content (e.g., "someone does something", "something has some properties" and "something is in some state") refer to objects, subjects, their properties, actions, states, etc., that exist in reality. However, this is not contrary to the thesis regarding the theoretical nature of the discussed concept: in principle, at the root of each theoretical category invariably lies an ontological one.[13] In our opinion, information denotes

[12] Here the author talks about the lack of correspondence between the transmitted message and the facts it reflects; actually, we perceive only some "echo" of the essence of the transmitted facts (Петриченко, 2014, pp. 6–7), i.e., *information* is considered as a reflection, and the degree of correspondence with reality is discussed.

[13] For example, at the root of the constructed theoretical category *methods* lies the ontological category *processes*; at the root of *units of measurement* are the ontological categories *substance* and *quantity*; at the root of the *sciences*, more often there are entitative ontological categories that denote the subject of the study.

a particular complex whole made of entitative and attributive meanings that describes an object and its selected property (which is being highlighted at a given moment) or a subject, an object and an action performed on it, etc. Each of these concrete wholes of entitative and attributive meanings exists in reality and therefore has an ontological nature. For its part, information which describes and reflects these two types of meanings has a theoretical character: it exists not in reality, but only in the human mind as a part of theory.

7. Conclusions

We currently view information as a theoretical concept denoting an immaterial entity, namely a reflection: the result of the act of reflecting, which exists in the human mind as a part of theory, and is based on facts, actions, events, phenomena, etc. existing in reality (the concrete content of information being a combination of interacting entitative and attributive meanings).

Simply put, information refers to a chosen totality of an object and its property; an object or subject and their concrete state; a subject and its concrete action. Messages concerning such wholes are generated, encoded and decoded, collected, accumulated, classified, organized and structured, stored, compressed, analyzed, processed, transformed, recorded and transmitted by various means and media, etc.

The fact that information is the object of such actions and activities and is also distinguished or characterized by certain properties specific for the category of objects (such as quantity/amount, heterogeneity, structuredness, etc.) is also an argument in support of its entitative (although immaterial) nature, existing not reality but the human mind.

So, in our view, the concept of information has no ontological nature. Facts and events themselves exist in reality, but the information that describes them is present only in the minds of those for whom it is useful and relevant. Therefore, the concept must be defined as belonging to the theoretical constructed categories (characterized by the features [-existence in reality] and [+autonomy of existence]),[14] while the ontological (existing in reality) notions of 'object'

[14] In accordance with the second characteristic, the concept of information is related to entitative ontological categories; the first feature relates it to theoretical constructed categories, i.e. with the., entities that exist not in reality, but only in the human mind.

and 'feature' or 'action' lie in its roots. At the lowest level of generalization, their combinations take different concrete values.

We hope that the shared observations will lead researchers of the concept of information to some new ideas that will contribute to further clarification of its nature.

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O kategorialnej przynależności ogólnego pojęcia informacji

Przedmiotem badania jest ogólne pojęcie informacji, interpretowane szeroko i analizowane w odniesieniu do jego semantyki. Celem jest ujawnienie jego statusu logicznego lub jego kategorialnej przynależności na najwyższym poziomie uogólnienia (abstrakcji): do kategorii bytów albo charakteryzujących je właściwości i działań; do kategorii ontologicznych albo skonstruowanych. Strukturalna klasyfikacja kategorii pojęciowo-semantycznych M. Popowej stanowi w artykule punkt wyjścia do dalszych rozważań. Kategorialny charakter ogólnego pojęcia informacji jest badany poprzez rozróżnienie charakterystyk jego znaczeń szczegółowych w osobnych dziedzinach naukowych i zawodowych. Przedstawiono argumenty na poparcie trzech hipotez dotyczących klasyfikacji pojęcia informacji: jako jednej z atrybutywnych kategorii ontologicznych (właściwości, działania/aktywności, stany, zjawiska), entytatywnych kategorii ontologicznych (materialnych i niematerialnych) oraz teoretycznych kategorii skonstruowanych.

Słowa kluczowe: kategoria pojęciowo-semantyczna; kategoria ontologiczna; kategoria skonstruowana; INFORMACJA

On the categorial nature of the generic concept of information

This study examines the generic concept of information, interpreted broadly and analyzed in relation to its semantics. The aim is to reveal its logical status, or its categorial nature at the highest level of generalization or abstraction: entitative or attributive; ontological or constructed. Popova's structural classification of conceptual-semantic categories is adopted as a framework and as a starting point for further considerations. The categorial nature of the generic concept of information is examined by distinguishing characteristics of its specific conceptualizations in various scientific and professional fields. Arguments are provided to support three hypotheses regarding the classification of the concept: as part of attributive ontological categories (properties, actions/activities, states, phenomena), entitative ontological categories (material and immaterial), and theoretical constructed categories.

Keywords: conceptual-semantic category; ontological category; constructed category; INFORMATION

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