Associate Professor, Rev. Jacek Leszek Łapiński, PhD, https://orcid.org/000-0001-9475-3377
Faculty of Natural Sciences and Health
The John Paul II Catholic University
of Lublin

Ontological and Meta–Physical Aspect of Information

Ontologiczny i meta-fizyczny aspekt informacji[1]

https://doi.org/10.34766/fetr.v48i4.877

Abstract: The publication contains analyzes on the understanding of information in terms of its quantitative and qualitative, objective and subjective aspects, meaning the way it works and the role played in the process of morphogenesis. The aim of the publication is an attempt to define the ontological status of information and indicate the possible sources of its origin. The qualitative, not quantitative, aspect of information is important. Determining what information is in its qualitative essence, what a being is, will allow us to create the necessary premises to try to confirm or deny the thesis that information is a fundamental and fully real causative and functional factor of morphogenesis, as well as to verify the correctness of the hypothesis about a specific, fundamental, related to the action of God source of the origin of information.
Keywords*: arche*, *eidos*, form, God, information

Abstrakt: Publikacja zawiera analizy na temat rozumienia informacji w aspekcie ilościowym i jakościowym, przedmiotowym i podmiotowym, sposobu jej działania i roli pełnionej w procesie morfogenezy. Celem publikacji jest próba określenia ontologicznego statusu informacji i wskazanie możliwych źródeł jej pochodzenia. Istotny jest jakościowy a nie ilościowy aspekt informacji. Określenie czym w swojej jakościowej istocie jest informacja, jakim jest bytem, pozwoli utworzyć niezbędne przesłanki do tego, aby podjąć próbę potwierdzenia lub zanegowania tezy, iż informacja stanowi fundamentalny i w pełni realny faktor sprawczo-funkcjonalny morfogenezy, a także zweryfikowania poprawności hipotezy o specyficznym, fundamentalnym, związanym z działaniem Boga, źródle pochodzenia informacji.
Słowa kluczowe: arche, Bóg, eidos, forma, informacja

Introduction

The problem of the status and operation of information is fundamental for understanding the functioning of all the systems that make up our *Universum*.[2] At the same time, the issue seems to be fraught with many controversies. It appears that, this state of affairs is at least partly due to the still valid model of science that adheres to mechanistic and

[1] Artykuł w języku polskim dostępny jest na stronie:
https://www.stowarzyszeniefidesetratio.pl/Presentations0/2021-4Lapi2.pdf

[2] This publication is the result and development of the analyzes carried out by the author during the review of the book by Stanisław Zięba, *Informacyjny wymiar wszechświata, życia i człowieka* [The Informational Dimension of the Universe, Life and Man] (Wydawnictwo Naukowe PWN, Warsaw 2020) and the subsequent review of the author's inaugural lecture entitled *Informacyjny wymiar człowieka* [Man's Informational Dimension], delivered in 2020 at the Pontifical Faculty of Theology in Wrocław. The presented work is largely based on the original text of these reviews.

positivist approaches. It seems that the majority of scientists were brought up on the Newtonian paradigm, which orders looking, for example, at physical or biological systems from the perspective of classical thermodynamics and seeing in them systems in which only energy and matter circulate. The same scientists seem to either completely overlook or minimize the role of information as a real causative factor responsible for the organization, functioning, etc. of individual systems. This is probably because Claude Shannon's information theory is widespread in the scientific community. In essence, it is a quantitative approach to information that is very useful for analyzing the phenomenon of communication between systems, but of little use in the situation of analyzing the pattern of system organization. The lack of a qualitative theory of information causes that shaping and informing the effects of information on physical and biological systems, including (as some researchers emphasize) social and cultural systems, to disappear from the research fields of not only physicists and biologists but also sociologists, psychologists, etc.

Information, especially of a qualitative nature, appears to be the basic factor that allows us to understand the phenomenon of morphogenesis. Morphogenesis is a process in which a series of transformations and changes occur and, as a result, the initial form develops, matures and takes on the final (adult) form. This process is common in the world and affects almost everything. It is seen in, for example, cosmogenesis, biogenesis, embryogenesis, anthropogenesis, sociogenesis, etc. (Gitt, 2009, p. 74). It is a kind of basis for the functioning of our world and ourselves, and at the same time remains very poorly known, or even mysterious. The knowledge that scientists have is significant, but it still does not provide us with a credible answer about what forms a form and what this fundamental form-creating factor is like.

The mystery of morphogenesis is a challenge to the world of science, both modern and ancient. It is no wonder then that in the last few centuries, this issue was an area of polemics and intense scientific disputes. It seems that the problem of morphogenesis has become a specific research area where various research concepts have been tested. One solution proposed uniting the mechanistic, vitalist, reductionist, etc. views into a single concept. Unfortunately, these "classic" (from today's point of view) approaches to morphogenesis, present in almost all physics, biology, genetics, etc. textbooks, turned out to be insufficient in the light of scientific data. They offered partial solutions, and there was no holistic approach. A new, organicisitic view of morphogenesis was probably first proposed by biologists (e.g. Hans Spemann (1938), Paul Weiss (1939), Aleksander Gurwitsch (1944; 1947), Rupert Sheldrake (1988; 1994; 1995; 2011), Teresa Ścibor-Rylska (1974; 1986)), who were inspired by the research of quantum physicists.

In the organicistic research perspective, information is of key importance for explaining the peculiarities of morphogenesis, or more precisely, the in-formative effect of information (Łapiński, 2008). Information seems to be the fundamental factor responsible for

the development and formation of all systems, including physical, biotic, social, etc. at every level of complexity. It is supposed to organize the individual systems while remaining an a-temporal and a-spatial factor. In its essence, it should constitute a non-local spatial pattern that causes the form of a system to "emerge" from the interactions among material components (Cárdenas-García, 2018, pp. 160 - 162).

The aim of this publication is primarily an attempt to define the ontological status of information and to indicate the possible sources of its origin. The qualitative aspect of information is important here, not the quantitative aspect. Determining what information is in its qualitative essence, what a being is, will allow us to create the necessary premises to attempt to confirm or deny the thesis that, most likely, information is the fundamental and fully real causative-functional factor of morphogenesis. It will also allow us to verify the correctness of the hypothesis about a specific, fundamental source of information related to the action of God.

1. Information: What Is it or Can it Be?

Information can be viewed in various ways. The subject literature is rich in various definitions of information. In the most intuitive and common-sense way, we perceive information as something that is delivered to us by a message (Buczkowska, 1994, p. 61; Ścibor-Rylska, 1974, p. 113). Without going into details, this way of presenting information indicates its quantitative aspect. In this case, information is a communiqué, a message. It requires the existence of both the sender and the recipient of the message. The sender emits a message in an appropriate form, and the recipient must be able to interpret the message as making sense and being meaningful. What is not interpreted remains as noise or a disturbance (Küppers, 1991, pp. 60-61).

The message itself can take various forms, for example, a series of sounds, an image, the concentration of a substance (e.g. the so-called morphogen model) (Green, 2002, pp. 392-408; Green, Sharpe, 2015, pp. 1203-1211), temperature, pressure, and even a runner announcing the news of winning the Battle of Marathon. Also, the sender and recipient can be almost anything: human, plant, animal, a physical phenomenon, an alarm, fuse, sensor, etc. In the case of a human (or hypothetically another rational being), there is no information without the presence of that human; he interprets the data as a meaningful message (pragmatic dimension of information) (Küppers, 1991, pp. 43, 174; Mazur, 1970, pp. 24-25). Concerning plants, animals, etc., it seems that (based on similarity) there is no information without an organism that can interpret the message, provided that the question of whatever interprets messages inside the organism (e.g. genetic information) remains an open question. The process of communication between inanimate, physical systems (e.g. quantum information) or technical devices, e.g. computers, occurs similarly.

The problems that accompany the quantification of information seem to be of a purely technical nature (Floridi, 2004, p. 562; Van Benthem, 2011). They focus on ensuring the best possible conditions for the transmission of or sending a message, thus effectively eliminating obstacles, distortions and errors. They also concern the issue of encoding and decoding, meaning the language of a message (syntactic and semantic dimension of information) (Płonka, 1998, p. 338; Szrejder, 1970, pp. 13-43; Crnkovic 2011; Brenner, 2014b, p. 391). Therefore, it should be noted that the quantitative approach to information developed by Claude Shannon (Shannon, Weaver 1949) is essentially a very useful tool for analyzing the phenomenon of communication between systems, yet it is of little use in the analysis of both a system's organization and the factors determining a system's certain and not different structure. Therefore, there is a need for information of a completely different nature: qualitative information (Mazur, 1966, Mazur, 1970, p. 81).

In qualitative terms, information appears or should appear as something that in-forms, giving form as a result of the interaction established with the shaped system. Its presence seems to be independent of man, although, at the same time, we are accompanied by the postulate of the existence of an adequate and efficient source that can generate it. This type of information also demands being treated as a real, not fictitious, form-creating factor. Only under such circumstances can this factor cause the system (whatever we mean by it), which has currently taken on some form (has its current quality), to change under the influence of information. It modifies its structure and properties, that is, it converts the form and thus changes its quality (it becomes something qualitatively better or worse).

In the light of the above comments, the question arises as to the premises indicating the existence of quantitative information. It turns out that they can be obtained from the works of quantum physicists such as Ervin Laszlo (2003; 2004; 2006), David Bohm (Bohm, 1988; Bohm, Hiley, 1993), Edgar Mitchell (2006, pp. 121-126), Walter Schempp (1993, pp. 109-164), Roy Frieden (2004), etc. In their opinions, information appears as the third (next to mass and energy) important element of the structure of the world and constitutes an inherent, real and effective factor of the entire cosmos (Laszlo, 2004, p. 2; Cárdenas-García, 2018). Being real, it simultaneously reveals the characteristics of a-materiality and a-energy. It manifests itself as a fundamental and phenomenal factor, chronologically first in relation to energy and matter (the ancient *arche*) (PWN Encyclopedia). Therefore, to define the essence of information from the qualitative and structural perspectives, it should, according to Ervin Laszlo, be defined as a real, physical factor, unconventional, non-vector, more subtle, scalar, and physically effective form of "subtle" energy (Laszlo, 2003, p. 74; Laszlo, 2007, p. 1; Brenner, 2014a, pp. 145-146).

Information is nature's *arche* sought by Greek philosophers. It is an *arche* because it is chronologically first in the order of existence. It is a specific quantum of existence carrying something's initial and constitutive organizational plan, a hologram (set of pattern-plans) of

the whole reality (Laszlo, 2004, pp. 107-108). Without it, without a pattern, without a pure idea of the composition of the system's arrangement or things, etc., nothing can happen. Hence, according to John Wheeler, the fundamental law of existence seems to read as follows: "*it from bit*" (Wheeler, 1989, pp. 309-336; Barzegar, Shafiee, Taqavi, 2020, pp. 375-384; Foschini , 2013, pp. 1-6; Brenner, 2014a, pp. 148-149; Brenner, 2014b, pp. 395-397).

In addition to *arche*, information is also *eidos* (Encyklopedia PWN), form, measuring a structure, an active and equally fundamental principle, the most important factor for organizing, forming and optimizing (von Weizsäcker, 1978, pp. 79-80). It is not the material (*hyle*) of things, but the organizer (*morphe*) of a material (e.g. energy, space, time) (von Weizsäcker, 1991, p. 10; Mayr, 2002, p. 124). It can also be assumed that it creates and determines all other types of forces and physical interactions (e.g. gravity, strong nuclear and weak electromagnetic interactions). Logically speaking, it should be expected that it affects not only the sphere of the micro-cosmos (e.g. the quantum, molecular, atomic or molecular levels), but also the area of the meso- and macro-cosmos. Under such circumstances, information comprehensively shapes biological, ecological, social and cultural systems. It also influences the organization of the entire *Universum*. In other words, information is both the pattern and quantum of existence and the Platonic demiurge.

As *eidos*, information seems to contain a kind of algorithm of action (Gell-Mann, 1996, p. 63ff; Mały słownik terminów i pojęć filozoficznych [A Little Dictionary of Philosophical Terms and Concepts], 1983, pp. 11-12). In this case, it is about acting according to the appropriate pattern or action sequences. The algorithm allows certain patterns, but at the same time excludes others. Therefore, information in some way determines an action, it becomes a limiting and optimizing factor.

2. Information: How Does it Work or Can it Work?

The operation of qualitative information, as Ervin Laszlo emphasized, consists of in-forming appropriate structures. The aforementioned physicists suggest that at the micro-cosmic level, the in-formation process takes place by influencing the form of the Schrödinger wave function (Laszlo, 2003, p. 75). By modifying the wave function, information modifies the entire system at actually any level of its complexity; it defines the form of the system, unites it and shapes its behavior. The in-formative effect of information is also a kind of "soft determinism" (Laszlo, 2003, p. 107). In-formation does not impose a specific and unique state of the system; through the wave function, in-formation only defines a set of possible states that a particle or system can assume within a more ordered, superior system. This is because the quantum level is the fundamental level for any material system (animate and inanimate).

It is at this level that any changes made generate significant consequences on all the other levels. Similar to the factors generating mutations in the genetic code (which essentially

appear as quantum superpositions of a system's potential final states) (Dürr, 2002, p. 345; Goswami, 2002, p. 8), it can be assumed that information influences the wave function in such a way that leads to a change in the quantum state (Gell-Mann, 1996, p. 196ff) or a specific quantum code characterizing a given system. In view of the above, information appears not only as an in-formative and form-generating factor, but also as a "mutational" factor (quantum, genetic, social mutation (??)); it is a specific tool (*aitia*) through which changes take place.

This kind of information operation seems to be possible not only due to elementary particles or molecules, but all material things that are quantum systems (Schäfer, 2006, pp. 515-516). From the physical point of view, even a living organism is a macroscopic quantum system (Laszlo, 2004, p. 7), and not only a biochemical machine (Mayr, 2002, pp. 32-33), and so quantum processes are revealed in it not only on a micro-scale, but also the macro scale (D. Aerts, S. Aerts, Broekaert, & Gabor, 2000, p. 1388). Moreover, Rupert Sheldrake proposes that social and cultural structures also have a specific quantum condition. In such a case, information would be able to generate effects at the meso- and macro-cosmic levels, perhaps by directly modifying the wave function, or, as Sheldrake suggests, the so-called morphic resonance mechanism (Sheldrake, 1995; Sheldrake, 2001, p. 40). Due to the nature of the current narrative, the description of how morphic resonance works will be omitted. I refer the inquisitive reader to Sheldrake's publication.

The results of the work by Sheldrake and other physicists suggest that information in its action is not a linear factor. Information is not an action of the type "factor A affects state B." Information works like a physical field, for example, magnetic, gravity, etc. It does not work on particular points, but in an area. In structural and functional terms, information is a field, or more precisely, an information field, that is, an immediate informational interaction (Laszlo, 1993, pp. 80-82; Laszlo, 2004, p. 82). It informs structures, meaning that it interacts by modifying, for example, the "quantum code" (initial conditions).

The information field, the universal hologram of the cosmos, is a real field with the properties of a sub-quantum, cosmic, holotropic field (Grof, 2006, pp. 131-132). Literally, everything is found in this field's sphere of influence, from quanta, organisms, social structures to the entire cosmos (Krippner, Conti, 2006, p. 98; Crnkovic 2011, p. 468). For David Bohm (Bohm 1961, pp. 262-264, 273, 281ff; Bohm, 1988, p. 177), the visible effect of the information field seems to be the phenomenon of holomovement, meaning overall movement and development (Schroll, 1995, p. 579). The quoted author claims that holomovement carries a hidden order and forms the basis for both biological life and inanimate matter. At the same time, it identifies itself with the common, universal, qualitatively and quantitatively infinite process of becoming and changing for everything that exists (Bohm, 1961, pp. 262-264, 273, 281ff; Dossey, 1982, p. 59; Dick, 1993, pp. 469-480).

Information as a form-creating factor and a sophisticated tool (*aitia*) works in a very successful, even spectacularly effective way. Fred Hoyle (1983), illustrating the effectiveness of information operation, refers to the example of the Rubik's cube. It contains as many as $5x10^{18}$ combinations of color settings. Arranging separate colors on each side of the cube by e.g. a blind player (thus making completely random moves) working at a constant speed of 1 move per second (Laszlo, 1993, p. 126) will take about $5x10^{18}$ seconds, or 126 billion years. However, if the player receives a hint of "yes" or "no" as to the correctness of the actions performed for each move, he will correctly arrange a Rubik's cube after statistically 120 transformations, which will take him (while still working at a speed of 1 move per second) about 120 seconds, meaning 2 minutes (Laszlo, 2004, pp. 88-89).

The situation of a specific prompt seems to have its counterpart in the sphere of biology. According to Stephen Jay Gould (1991) and Niels Eldredge (1985), an example of such a significant acceleration of macro-evolutionary processes are the processes related with the emergence of new species, which develop within a period of 5-10 thousand years, meaning almost immediately (in relation to the geological time scale) (Laszlo, 2004, p. 89). Erwin Laszlo states that the accelerating factor, the transmitter "prompting" the proper operation and at the same time binding genes (information packets) (Gell-Mann, 1996, pp. 401-416) with the external living environment of individual species may be information acting as a biofield of an informative character (Laszlo, 2004, pp. 39, 89-90).

3. Meta-physical level of information

Stanisław Zięba (2020a) proposes taking into account the information factor as a very useful tool for explaining various events and processes taking place in the environment surrounding us. The mentioned author justifies and points to information as a paradigm when analyzing cosmogenesis (cosmological, physical information), biogenesis (biological, genetic information), anthropogenesis (anthropological information), etc. Zięba's image of information and the way it operates in these fields allows it to be perceived as *arche* and *eidos,* something that organizes, creates, coordinates, something that is downright acute and intelligent. The problem is that it comes “from nowhere.” It appears suddenly, just when it is needed, becomes a bit of a specific surrogate of the causative factor and disappears into "nowhere."

The above state of affairs seems to be symptomatic of many contemporary researchers. They repeatedly limit themselves to analyzing information at the level of cybernetics and telecommunications; they are satisfied with the achievements of information theory in the field of computer science. Moreover, attempts are made to apply the findings from these areas directly to physics, biology, anthropology, sociology, culture, etc., forgetting

that these areas are not compatible with each other, but are only similar. The effect is solutions that are often of little use, sometimes even confusing.

Stanisław Zięba's postulate about the usefulness of the information factor is, by all means, correct, provided that the statute and the source of information are specified. In other words, what is needed is an ontology of information and, consequently, reflection on information not only at the objective or subjective levels, but also at the philosophical and theological levels. It is good to know not only "how" information works, but above all "why" it works in a certain way and what its "source" is.

The postulate of developing a broadly understood ontology of information is in fact an attempt to analyze information from the human point of view. We are not interested in seeing information through other beings or systems (animate or inanimate) that are capable of absorbing and processing information. As an introduction, in the ontology of information, the way information exists should be clarified: it is either something real or fictional, meaning how it exists.

Luciano Floridi (Floridi, 2002, pp. 123-145; Floridi, 2004, pp. 554-582; Floridi, 2011) and Robert Poczobut state that at present, there are at least two types of approaches to the ontic status of information: traditional (relational) and non-relational. The first (Poczobut, 2005, p. 185) emphasizes the subjective aspect of information. It refers to the principle: "there is no information without interpretation" and "there is no interpretation without a recipient," which means that there is no information without its proper understanding and physical implementation by a recipient (Floridi, 2004, pp. 572-573). This position refers to the Shannon's quantitative (Lee, 1963, p. 1161) theory of information and the research by John Pierce (1967). Hence, according to Poczobut, within the relational approach, information appears as a relational feature of a signal (Płonka, 1998, p. 338), whose main purpose is to reduce a recipient's uncertainty. A signal's strength, meaning the amount of information that the recipient should receive, depends solely on the nature and structure of his perceptual apparatus.

The non-relational status of information, in turn, emphasizes its objective aspect. It is based on the statement that the existence of information is independent of a recipient's existence (Floridi, 2004, p. 574). Moreover, the entire space of the cosmos is filled with information, and, it is saturated with energy and other physical forces. The observer does not "create" information, he only acquires it from the environment (information source) using stimuli, signals, etc.; meanwhile, the stimulus is not information, but only its carrier (Mazur, 1966, p. 44; Brenner, 2014b, p. 398). However, emphasizing the non-relational approach, the objective aspect of information cannot be completely dismissed from its subjective dimension; both aspects interpenetrate each other. Therefore, information is one thing, and "physical data" is another. According to Stanisław Krajewski, "data is 'bare', information is part of the structure" (Krajewski, 2005, p. 163). According to this author, the transmission of

data itself is not a transmission of information. Of course, data transfer can become a transfer of information, but only in the event of the existence of a recipient (conscious, for example, a human, or unconscious, such as an industrial robot) who will treat the obtained data as information and not as useless noise (Krajewski, 2005, p. 163).

From a cybernetic perspective, quantitative information is a message that is usually transmitted through a material medium (for example, an impulse, air, water, light, sound, image, etc.). For the sake of accuracy, it should be added that researchers also note cases of transmitting information without a carrier; information goes directly to the recipient's brain. In each case, however, the causative force of the message does not depend on the message itself (it is powerless in itself), but on the possibilities of the recipient who will properly interpret it and then fully or partially implement it. In terms of the ontical statute, the message itself is also not real: it does not exist without the recipient. Therefore, I believe, using the language of classical philosophy, that the message is in fact a mental being, but it is based on things. The carrier, the base, is real. The intelligent recipient is also real, as he or she decodes and interprets what is contained in the medium and brings a meaningful message into existence.

Qualitative information should be something real and independent of the human being. The presence of an intelligent recipient or observer is not necessary in this case. Therefore, I am inclined to say that on the ontical level, qualitative information is a being of a reality other than material reality; it is a-material, non-physical, meta-physical. It is reality not directly stated, but *ex-post*, based on the generated measurable, tangible effects. This reality is analogous to the reality, for example, of a gravitational or magnetic field or the existence of dark energy. We deduce their presence from the possible effects they generate in the environment. In the case of qualitative information, we are dealing with *eidos* of a field nature, which, by in-forming structures, causes real effects.

Information ontology draws attention to the need to identify the source of information. In other words, does information generate itself (self-generation), or does someone or something create it? The self-generation hypothesis is too naive and is an attempt to circumvent the problem rather than solve it. In the case of quantitative information, the source of its origin is each sender or intelligent recipient. However, it is difficult to see a human being as a source of qualitative information; after all, it is neither matter nor energy, but a form-creating factor operating outside the sphere of matter, energy or space. Therefore, it demands, as Stanisław Zięba pointed out (2020b, pp. 55, 60, 62), a peculiar non-genetic source, a source rooted in physics of a different kind (extra-physics, meta-physics). It is specific post-biological information, whose beginning is or should be an intelligent author. At this point, it is worth considering the concept of the Absolute, God, as the fundamental creator of information (Brenner, 2014a, p. 163). Only God, by virtue of his ontical statute, can operate outside the aforementioned spheres of our reality.

In Christian philosophical and theological terms, God is the only, highest and most powerful necessary (self-existing) being, a perfect being of a purely spiritual nature, having a dynamic internal structure defined as the Holy Trinity. For the purposes of the conducted analyzes, the issues of the spiritual nature of God should be emphasized. Unfortunately, the current definition of a spirit as the opposite of matter is deformed. It does not say what something is, but only what something is not. However, we do not have another definition. Meanwhile, worth emphasizing is that the spirit in its essence seems to be something radically different to matter, and not just its opposite. We do not know what a spirit is, so we do not know its essence. We know, however, that a spirit is not some kind of "anti-matter" or even "a-matter."

In my opinion, a spirit is something primal, fundamentally concrete and radically real, but on a completely different (highest) level of reality. Colloquially speaking, there is nothing more fundamental, concrete, real and permanent than a spirit. Hence, the physics of God (physics of the spirit) is absolutely initial, primary and fundamental physics, the total meta-physics, the most real and concrete, but at the same time it is extremely different, completely different from human physics (material physics). It is in the area of the overall and superior physics of God that all other types of physicists are located as subsets, particular cases, local variants, mutations or designs of possible forms of reality. One of them is our universe in which we live and undergo changes according to the laws of physics as we presently know.

The world, our space-time and the cosmos could not have come into existence without qualitative information, without the founding *eidos*. Energy, treated as the substance of the world, is an absolutely necessary element, but not sufficient to create the world. We need information as an adequate factor able to format energy and other processes. It is absolutely first in the order of existence (*arche*) and, therefore, there must be an external factor, something "out of this world." Its source should be meta-physical (meaning "beyond physical") and novel. Following this and confirming Wheeler's thesis, it was not the world that generated information, but information that shaped the world (and all its physical, biological, social structures, etc.). The world is the result of its operation, a specific derivative of information, constantly emerging in the process of continuously "becoming" and deposited, following Plato's suggestions, in the eternal mind of God.

In the Bible, one can find statements that create specific parallels and analogies for understanding and perceiving the ontological and meta-physical status of information. The starting point seems to be the category of the Word of God (Mały słownik teologiczny [A Small Theological Dictionary], 1987, pp. 419-420) - according to Werner Gitt, "the most valuable information that has ever been broadcast" (Gitt, 2009, p. 245). To begin with, the following important theological issues should be distinguished. First is the Eternal Word, meaning the Second Divine Person, the Son of God. He is the word that is God, the one who

through his power not only created (initiated) everything (here in the sense of "our world"), but he is also the One who continues to support everything in existence (functioning, "keep on going.") Second is the Incarnate Word, meaning Jesus Christ, who is at the same time true God and true Man, the Savior and Redeemer. Third, is the word of God, the way of proclaiming God's message to man, the way God communicates with man, for example, through a prophet (spoken word), but he is also a kind of real "tool" through which God manifests His action and His causative power is revealed (a powerful word, a word spoken with authority).

Trying to find a parallel between information and the Eternal Word is wrong. It is an example of a reductionist approach. God (the Son of God) cannot be reduced only to the dimension of informational, some omnipotent being generating tangible results, a kind of total proto-information or hyper-information. In the prologue to his gospel, St. John writes that "in the beginning was the Word" (Jn 1:1), but the parallel of the type "in the beginning was Information" in the above context is false. This does not mean, however, that the knowledge that God has at his disposal does not include the problems we can attribute to information. On the contrary, God has extremely great, infinite knowledge, abilities and power, and the above issues are only a fraction of God's intellect, skill and power. At the beginning of the creation of the world is the Word, God, and information is somewhat hidden in the Word; thus, it can act as a founding *arche* and *eidos* for the world.

Equally false is the approach of linking the Incarnate Word to information. The God-man, Jesus Christ, lived in a specific historical time, a specific geographical place, experienced all real limitations and hardships resulting from being a human being, and finally died on the cross for the salvation of man. At no point in his earthly existence did he reveal himself as a-material and a-spatial form-creating factor. On the contrary, Christ, even after his resurrection and reformatting his body in a way that enabled him to live a human life under the conditions of the physics of the spirit still retained his purely material qualities: he ate, drank, told Thomas to touch his wounds in order to convince him of their being real, etc.

It seems that parallels related to information can be found in the category of the Word of God, the spoken word, the word of power (A Small Theological Dictionary, 1987, pp. 418-420). I believe that the issue of treating the word spoken as quantitative information and a divine message requires reflection. In this situation, the sender may be God himself or someone in his name, such as a divine herald or a prophet. The recipient is man, who is also the performer. The specific "technical" problems boil down to the way of proclaiming the word and the language used. Here we are not taking into consideration moral dispositions or the will to undertake obligations (related to the proclamation of the word and the implementation of resolutions) in relation to the human sender or recipient.

The aforementioned reflection concerns the question of the nature of such a word: is this type of word, even from the perspective of information theory, just a message or much more than a message? Even if such a word is treated as a message, does the sender of the message itself (God) not affect the essence of this message (regardless of the method of communication and its content)? The nature of the sender and his hierarchical position determine the importance and meaning of this message. An instruction or statement announced by a man is incomparably lower, much less important and less significant than the same directive proclaimed by God (or his messenger). It automatically becomes the binding norm and law. *Nota bene*, this norm and law remain beyond man's jurisdiction; only the person who issued it or his superior can change it.

Another category of the Word of God, namely the word of power, may suggest connections with qualitative information. There are many examples of such a word, for example, the divine "let there be!" (Gen 1: 3) in the creation of the world, "Talitha kum" (Mk 5:41) in the resurrection, and "get up" (Mt 9: 5-6) when healing, etc. In each of these cases, there is a message and an immediate effect, the implementation, or rather self-realization of the message. The problem is similar: is this qualitative information or more than this kind of information? In this situation, it is worth considering the thesis that the word of power is much more than a form-creating principle. It seems to contain such a principle, but in itself appears as something incomparably greater, even at the level of information.

There is a fundamental difference in the way information is generated by man and the way it is generated by the Absolute (Gitt, 2009, pp. 248-259). Information generated by a human using, for example, a word, is an idea, a message that requires not only a recipient, but also a demiurge, engineer, effector; this is someone who will implement the message contained in the communiqué (using appropriate tools and material). Without the contractor, the communiqué cannot be realized. The information generated by the Absolute in the spoken word, or even more so in a word of power, seems to work differently. It is not wrong to state that it is both a message and a directive ("let there be!") with a plan, a formative factor, and a tool. It can be said that the information somehow becomes part of the "composition" and "structure" of the Word of God. It works in a way that excludes the need, let alone the necessity of the contractor's participation (although he can participate). Does this mean a process of self-realization?

In linguistic terms, the essence of the Word of God is contained in the Hebrew concept *dabar* (Biblical Dictionary, 1984, p. 139). In the first place, it expresses a prophetic revelation, whose word reveals God's power, being a testimony of God's constant presence and action, and finally, it is a power operating through the Absolute. Undoubtedly, a *dabar* is not an ordinary sound (*vox*) (A Small Dictionary of Philosophical Terms and Concepts, 1983, p. 359). It possesses causative power. The Word of God (*Verbum Dei*), spoken at every Holy Mass during the reading of the Gospel, has the real power to take away sins (which is

expressed in the formula spoken by the priest: "let the words of the Gospel take away our sins"). *Dabar* has a comprehensive, area-wide impact. When it captures something in its sphere of influence, it changes, transforms, metamorphoses everything according to the divine directive contained in it. Perhaps this is an unauthorized suggestion, but *dabar* in its operation seems to allude to the operation of the physical field or the information field.

Conclusion

Summarizing the current analysis, it should be stated that the problems related to the category of information reveal a whole *spectrum* of intriguing issues. None of the topics raised have been thoroughly discussed and explained; each in its current form is only a contribution to further discussion and an incentive to continue our research. Each of them is accompanied by an intrusive, but also a mobilizing question asked by the skeptic: is there no other solution? Have all other sensible causes and factors been eliminated? Thus, there is no ending and no final conclusions to this matter. There are open doors and an invitation to wander; after all, every researcher is an authentic *homo viator*, a pilgrim journeying to the source of knowledge.

Bibliography:

Aerts, D., Aerts S., Broekaert, J., Gabora L. (2000). The Violation of Bell Inequalities in the Macroworld, *Foundations of Physics*, *30,* 9, 1387-1414.

Barzegar, A., Shafiee, A., Taqavi, M. (2020). "It from Bit" and Quantum Mechanics, *Foundations of Science*, *25*, 375–384.

Bohm, D. (1961). *Przyczynowość i przypadek w fizyce współczesnej*, przeł. S. Rouppert, Warszawa: KIW.

Bohm, D. (1988). *Ukryty porządek*, przeł. M. Tempczyk, Warszawa: Wydawnictwo Pusty Obłok.

Bohm, D., Hiley, B. (1993). *The Undivided Universe. An Ontological Interpretation of Quantum Theory*, London-New York: Routledge.

Brenner, J.E. (2014a). Information: A Personal Synthesis, *Information, 5*, 134-170.

Brenner, J.E. (2014b). The Logic of the Physics of Information, *Information*, *5,* 389-403.

Buczkowska, J. (1994). Funkcje znaku a przepływ informacji, (w:) M. Lubański, Sz. Ślaga (red.), *Z Zagadnień Filozofii Przyrodoznawstwa i Filozofii Przyrody*, *14,* 13-125, Warszawa: Wydawnictwa ATK.

Cárdenas-García, J.F. (2018). Information ethics in the information age, *Cosmos and History: The Journal of Natural and Social Philosophy, 14*, 3, 147-166.

Crnkovic, G.D. (2011). Dynamics of Information as Natural Computation, *Information,* 2, 460-477.

Dick, B. (1993). The Group Matrix as a Holomovement and Quantum Field, *Group Analysis*, *26*, 4, 469-480.

Dossey, L. (1982). Space, Time & Medicine, *ReVision: A Journal of Consciousness and Change*, *5*, 2, 50-62.

Dürr, H.P. (2002). Are Biology and Medicine Only Physics? Building Bridges Between Conventional and Complementary Medicine, *Bulletin of Science, Technology & Society*, *22*, 5, 338-351.

Eldredge, N. (1985). *Time Frames: The Rethinking of Darwinian Evolution and the Theory of Punctuated Equilibria*, New York: Simon & Schuster.

Encyklopedia PWN, hasło: *arche,* from: https://encyklopedia.pwn.pl/szukaj/arche.html, (access: 14.03.2021).

Encyklopedia PWN, hasło: *eidos*, from: https://encyklopedia.pwn.pl/szukaj/arche.html, (access: 14.03.2021).

Floridi, L. (2002). What is the Philosophy of Information? *Metaphilosophy*, *33,* 1-2, 123-145.

Floridi, L. (2004). Open problems in the Philosophy of Information, *Metaphilosophy*, *35,* 4, 554-582.

Floridi, L. (2011). *The philosophy of information.* Oxford: Oxford University Press.

Foschini, L. (2013). *Where the it from bit come from?* 1-6, from: arXiv:1306.0545v1, (access: 14.03.2021).

Frieden, R. (2004). *Science from Fisher Information*, Cambridge: Cambridge University Press.

Gell-Mann, M. (1996). *Kwark i jaguar. Przygody z prostota i złożonością*, przeł. P. Amsterdamski, Warszawa: Wydawnictwo CIS.

Gitt, W. (2009). *Na początku była informacja*, przeł. H. Kluzik, Ostróda: Wydawnictwo Theologos.

Goswami, A. (2002). A Quantum Explanation of Sheldrake's Morphic Resonance, *Science Within Conciousness*, *7,* 1, 1-11, from: https://www.stealthskater.com/ Documents/Consciousness_32.pdf, (access: 14.03.2021).

Gould, S.J. (1991). *Niewczesny pogrzeb Darwina. Wybór esejów*, przeł. N. Kancewicz-Hoffman, Warszawa: PIW.

Green, J.B.A. (2002). Morphogen gradients, positional information, and Xenopus: Interplay of theory and experiment, *Developmental Dynamics, 225*, 392-408.

Green, J.B.A., Sharpe J. (2015). Positional information and reaction-diffusion: two big ideas in developmental biology combine, *Development*, *142*, 1203-1211.

Grof, S. (2006). The Akashic Field and the Dilemmas of Modern Consciousness Research, (in:) E. Laszlo, *Science and the Reenchantment of the Cosmos. The Rise of the Integral Vision of Reality*, 130-143, Rochester-Vermont: Inner Traditions.

Gurwitsch, A.G. (1944). *Tieoria biołogiczeskogo pola*, Moskwa.

Gurwitsch, A.G., Gurwitsch L.D. (1947). *Mitogienez i tieoria biołogiczeskogo pola,* Moskwa: Miedsowgiz.

Hoyle, F. (1983). *The Intelligent Universe*, London: Michael Joseph.

Krajewski, S. (2005). Jak wzmocnić test Turinga?, (w:) M. Heller, J. Mączka (red.), *Informacja a rozumienie*, 159-176, Kraków: Biblos.

Krippner, S., Conti, B.A. (2006). The Furrows of Reality. Scientific and Spiritual Implications of the Reenchanted Cosmos, (in:) E. Laszlo, *Science and the Reenchantment of the Cosmos. The Rise of the Integral Vision of Reality*, 95-100, Rochester-Vermont: Inner Traditions.

Küppers, B.O. (1991). *Geneza informacji biologicznej. Filozoficzne problemy powstania życia,* przeł. W. Ługowski, Warszawa: PWN.

Laszlo, E. (1993). *The Creative Cosmos. A Unified Science of Matter, Life and Mind*, Edinburgh: Floris Books.

Laszlo, E. (2003). *The Connectivity Hypothesis. Foundations of an Integral Science of Quantum, Cosmos, Life and Consciousness*, Albany: State University of New York Press.

Laszlo, E. (2004). *Science and the Akashic Field: An Integral Theory of Everything*, Rochester: Inner Traditions.

Laszlo, E. (2006). *Science and the Reenchantment of the Cosmos. The Rise of the Integral Vision of Reality*, Rochester-Vermont: Inner Traditions.

Laszlo, E. (2007). In-formation Field Hypothesis, *Electronic Journal of Sociology*, 1-13, from: http://www.sociology.org/ejs-archives/2007/_information_field_laszlo.pdf, (access: 14.03.2021).

Lee, Y.W. (1963). Problem teorii sygnałów, *Znak*, *112* (10), 1159-1162.

Łapiński, J.L. (2008). *Morfogenetyczna koncepcja układów biotycznych*, Lublin: EkoKul.

Mały słownik teologiczny, (1987). K. Rahner, H. Vorgimler (red.), przeł. T. Mieszkowski, P. Pachciarek, Warszawa: Instytut Wydawniczy Pax.

Mały słownik terminów i pojęć filozoficznych, (1983). A. Podsiad, Z. Więckowski (red.), Warszawa: Instytut Wydawniczy Pax.

Mayr, E. (2002). *To jest biologia. Nauka o świecie ożywionym*, przeł. J. Szacki, Warszawa: Prószyński i S-ka.

Mazur, M. (1966). *Cybernetyczna teoria układów samodzielnych*, Warszawa: PWN.

Mazur, M. (1970). *Jakościowa teoria informacji*, Warszawa: Wydawnictwo Naukowo-Techniczne.

Mitchell, E. (2006). Consciousness in the Reenchanted Reality, (in:) E. Laszlo, *Science and the Reenchantment of the Cosmos. The Rise of the Integral Vision of Reality*, 121-129, Rochester-Vermont: Inner Traditions.

Pierce, J.R. (1967). *Symbole, sygnały i szumy. Wprowadzenie do teorii informacji*, przeł. J. Mieścicki, R. Gomulicki, Warszawa: PWN.

Płonka, P. (1998). Hasło: Informacja, (w:) Jura Cz., Krzanowska H. (red.), *Encyklopedia biologiczna*, 4, 338, Kraków: OPRESS.

Poczobut, R. (2005). Od informacji fizycznej do informacji fenomenalnej, (w:) M. Heller, J. Mączka (red.), *Informacja a rozumienie*, 177-193, Kraków: Biblos.

Schäfer, L. (2006). Quantum Reality, the Emergence of Complex Order from Virtual States, and the Importance of Consciousness in the Universe, *Zygon*, *41,* 3, 505-532.

Schempp, W. (1993). Quantum Holography and Neurocomputer Architectures, *Journal of Mathematical Imaging and Vision*, *2*, 109-164.

Schroll, M. (1995). Nauka, pseudonauka i poszukiwanie tego, co autentyczne. Ontologiczne i epistemologiczne podstawy psychologii transpersonalnej, (w:) K. Jodkowski (red.), *Teoretyczny charakter wiedzy a relatywizm. Realizm, Racjonalność, Relatywizm*, 17, 551-616, Lublin: Wyd. UMCS.

Shannon, C., Weaver, W. (1949). *The Mathematical Theory of Communication*, Urbana: University of Illinois Press.

Sheldrake, R. (1988). *The Presence of the Past. Morphic Resonance and the Habits of Nature*, London: Collins.

Sheldrake, R. (1994). *The Rebirth of Nature. The Greening of Science and God*, Rochester: Park Street Press.

Sheldrake, R. (1995). *A New Science of Life. The Hypothesis of Morphic Resonance,* Rochester-Vermont: Park Street Press.

Sheldrake, R. (2001). *Niezwykłe zdolności naszych zwierząt*, przeł. K. Chmiel, Warszawa: Książka i Wiedza.

Sheldrake, R. (2011). *Nowa biologia. Rezonans morficzny i ukryty porządek*, przeł. M. Filipczuk, Warszawa: Wyd. Virgo.

Słownik biblijny, (1984). H. Langkammer (red.), wyd. II, Katowice: Księgarnia św. Jacka.

Spemann, H.C. (1938). *Embryonic Development and Induction*, New Haven: Yale University Press.

Szrejder, J.A. (1970). O semantycznych aspektach teorii informacji, (w:) A.I Berg (red.) *Informatyka i cybernetyka*, przeł. E. Nowicki, 13-43, Warszawa: WNT.

Ścibor-Rylska, T. (1974). *Porządek i organizacja w przyrodzie*, Warszawa: IW Pax.

Ścibor-Rylska, T. (1986). *Tajemnice uorganizowania żywej komórki*, Warszawa: IW Pax.

Van Benthem, J. (2011). *Logical Dynamics of Information and Interaction*. Cambridge: Cambridge University Press.

Von Weizsäcker, C.F. (1978). *Jedność przyrody*, przeł. K. Napiórkowski (et. al.), Warszawa: PIW.

Von Weizsäcker, C.F. (1991). Przedmowa, (w:) B.-O. Küppers, *Geneza informacji biologicznej. Filozoficzne problemy powstania życia,* przeł. W. Ługowski, 7-17, Warszawa: PWN.

Weiss, P. (1939). *Principles of Development*, New York: Holt.

Wheeler, J.A. (1989). *Information, Physics, Quantum: The Search for Links*, (Reproduced from *Proceedings of the 3rd International Symposium on Foundations of Quantum Mechanics in the Light of New Technology*, Tokyo, from: https://jawarchive.files.wordpress.com/2012/03/informationquantumphysics.pdf, (access: 14.03.2021).

Zięba, S. (2020a). *Informacyjny wymiar wszechświata, życia i człowieka*, Warszawa: Wydawnictwo Naukowe PWN.

Zięba, S. (2020b). *Informacyjny wymiar człowieka*. Wykład inaugurujący rok akademicki 2020/21 na Papieskim Wydziale Teologicznym we Wrocławiu, Lublin: wyd. Wyższa Szkoła Nauk Społecznych z siedzibą w Lublinie.