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WHAT DID LEM THINK OVER?

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ABSTRACT

Stanisław Lem is considered the most outstanding representative of Polish and one of the most eminent representatives of world science-fiction literature, as well as a futurologist and—at least by some—a philosopher who, in the form of novels and short stories written in the convention of *science fiction* and the so-called discursive prose, touched upon important philosophical problems concerning the place of man in the Universe, the effects of technological and civilisational progress and the issue of the limits of cognition. The article reconstructs and analyses the main philosophical problems presented in the work *Filozoficzny Lem. Wybór tekstów Stanisława Lema i opracowania* [*The Philosophical Lem. A Selection of Texts by Stanisław Lem and Studies*] edited by Filip Kobiela and Jakub Gomułka.

Keywords: Stanisław Lem, fantasy, futurology, consciousness, virtual reality, transhuanism, anthropic principle, evolution.

INTRODUCTION

To mark the centenary of Stanislaw Lem's birth in 2021, a number of interesting publications have been displayed. One of them is *Philosophical Lem. A Selection of Texts by Stanisław Lem and Studies* [*Filozoficzny Lem. Wybór tekstów Stanisława Lema i opracowania*] edited by Filip Kobiela and Jakub Gomułka.[1] This is the first volume subtitled *Natural or Artificial? Being, Mind, Creativity* [*Naturalne czy sztuczne? Byt, umysł, twórczość*]. The authors have announced a continuation of the work in the form of volume two. And very well, because Lem is usually identified as a writer of *science fiction* and a futurologist, while he wrote about himself that "basically, I was most interested in philosophy, and I think I was looking for it not so much from philosophers, but from cyberneticians, physicists, biologists."[2]

[1] F. Kobiela, J. Gomułka (eds.), *Filozoficzny Lem. Wybór tekstów Stanisława Lema i opracowania*, ALETHEIA Publishing House, Warsaw 2021, pp. 555.
[2] S. Lem, *About Myself*, 1964.

Philosophical themes can be found in almost every Lem's work—in novels, short stories and in so-called discursive prose. He devoted a lot of space to the condition of modern man and reflected on the effects of technological and civilisational progress. He also recognised the negative effects of technical development, many aspects of which he accurately predicted. For example, a vision of the Internet is already included in *Dialogues* [*Dialogi*] (1957), but Lem wrote: "It was only when I used the Internet that I realised that there were so many idiots in the world."[3] However, he saw the most serious problems in the limitations of human nature, especially cognitive limitations. Experts in Lem's works analysed the selected fragments of his works from the point of view of momentous philosophical problems that appear in them. The main theme of the work *Philosophical Lem* is not what Lem predicted, but what Lem thought about.

DIALOGUES OR THE HARD PROBLEM OF CONSCIOUSNESS

Paweł Grabarczyk's commentary on the first part of *Dialogues*, which opens the anthology, provides an introduction to the reflection on the notion of consciousness and personal identity in *Dialogues I*.[4] The question guiding the work's protagonists, Philonous and Hylas, is how consciousness can be preserved beyond the limit set by the destruction of the body. The answers can be divided into two main strategies: the possibility of resurrection by recreating a human being from atoms, and the "transfer of consciousness" in separation from the body to a permanent medium, such as a digital record in a machine.[5] The most significant assumption of the discussion of Philonous and Hylas (the names are, of course, a reference to the characters in Berkeley's work[6]), to which they initially agree is that there is a certain micro-level at which the particles of the matter become perfectly interchangeable, so that it would be possible to reproduce a pre-existing structure. This assumption is well established on the basis of quantum mechanics, in which the principle of identity of indistinguishable particles applies. However, Philonous argues that such a reconstruction of the structure would lead to a paradox, which Hylas—a supporter of naturalism—cannot accept. Would a man reconstructed from atoms retain his identity? What happens if the copy is made after death, and what happens if it coexists with the original for a period of time?

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[3] https://culture.pl/pl/artykul/13-przepowiedni-lema-ktore-sie-sprawdzily, 2022.

[4] P. Grabarczyk, *Jak się wskrzeszać? Komentarz do pierwszej części Dialogów Stanisława Lema*, in: *Filozoficzny Lem*..., op. cit. pp. 25–42.

[5] Ibidem, p. 25.

[6] G. Berkeley, *Trzy dialogi między Hylasem i Filonousem*, J. Sosnowska (Trans.). Wydawnictwo ANTYK, Kęty 2002.

This example leads the reader to suppose that the difference between the existence of a copy after death, before death or during death is not particularly significant, but intuition contradicts this. When the copy is a human person, it is entitled to an additional "first-person" perspective. With inanimate objects or animals, we only have the possibility to observe the external.[7] If our duplicate does have some experiences, however, they will not be our experiences, and so it will be as separate from us as any alien person. According to Hylas, the creation of a perfect copy after death is possible, but the "original" and the "copy" cannot exist as two persons at the same time. The matter in human bodies is constantly being exchanged, so it is not possible to isolate a portion of it that would constitute the essence of identity. Grabarczyk emphasises that even if a world existed in which it were possible to pinpoint the spatio-temporal trajectories of each atom, we would, in the best case scenario, be faced with the dilemma of Thomas from Aquinas, because all the time we are consuming plants that derive their energy from the soil in which some of our ancestors rested.[8]

Following John Locke's classic distinction, it is necessary to separate the identity of a person (continuity of the duration of the body) from the identity of a person (psychological continuity). According to this, two people with the same memories are the same person. According to Parfitt, on the other hand, once what constitutes the content of consciousness has been copied into a new brain, it is impossible to determine unequivocally whether the being created by this procedure would retain the identity.[9]

Grabarczyk notes that Lem, in *Dialogue I*, does not contemplate a change of perspective, which would be the regulation of a "*conceptual microscope*,"[10] so Grabarczyk notes that Lem in *Dialogue I* does not consider a change of perspective, which would be to adjust the conceptual microscope, that is, to focus not on atoms but on neurons. The content of the conversation between Hylas and Philonous would then be a prelude to a debate about functionalism, according to which the human brain can be described as the functional organisation of the brain, and thus as the ways in which neurons come together to form interacting networks. It reduces it to the interaction between stimuli and the responses to them. Such a structure could be reproduced in a medium with characteristics physically different from the human brain.[11] Contemporary theories of the mind associated with functionalism take aim at "consciousness upload" and rely on neurons.[12]

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[7] https://filozofuj.eu/artur-szutta-gdzie-jest-umysl/.
[8] P. Grabarczyk, *Jak się wskrzeszać?*, op. cit., p. 31.
[9] Ibidem, p. 32.
[10] Ibidem, p. 33.
[11] Ibidem, p. 34.
[12] Grabarczyk refers to an article by David Chalmers *Uploading. A Philosophical Analysis*, in: *IntelligenceUnbound: The Future of Uploaded and Machine Minds*, R. Blackford, D. Broderick (eds.), Wiley Blackwell, Chichester 2014, pp. 102–118.

Destructive upload assumes that recording the functional structure of the brain involves destroying it irreversibly. *Non-destructive upload* assumes that it is possible to image the brain structure with a scanner without destroying the organ. If a personality can be copied using a non-destructive scan, a person with identical views and memories will be created, but not the same person. There is also a third type of upload, called *gradual upload*. It involves the modification of the brain acting by means of the gradual attachment of artificial elements to it, which will eventually completely take over its functions. Only a gradual upload would be able to preserve personal identity.

David Chalmers believes that the difference between destructive and gradual upload is not so important, as it comes down to the speed of the procedure. In Lem's *Dialogues*, there is a vision of a gradual upload in which the condition for the "transfer" of consciousness is its continuous uninterrupted work during integration, so that it cannot disperse even for a moment into two independent systems. The specificity of consciousness would thus be its continuity and processuality, as Grabarczyk notes.[13]

In the article *Dialogues and the cybernetic theory of consciousness*[14] Jakub Gomułka notes that *Dialogues IV* and *V* focus on the problem of the nature of consciousness and constitute a kind of separate entity of the whole cycle. Hylas and Philonous are representatives of very different perspectives. According to Hylas, consciousness is something concrete and specific. He defends the traditional philosophical intuition that says that pure consciousness can be reached to know and describe its properties through certain operations, such as Edmund Husserl's transcendental reduction. Philonous, who according to Gomulka is a representative of Lem's views, assumes that consciousness is an abstract that involves various processes (seeing, thinking, feeling pain, etc.), and that one can only speak of consciousness when a minimum of one of these occurs.[15]

PHANTOMATICS OR VIRTUAL REALITY

In *Summa technologiae* Lem created a project for a field called "phantomatics." It was to deal with the creation of artificial reality, imitating natural reality or creating perfect sensory illusions. Paweł Grabarczyk succinctly defines it as a technology providing human beings with cognitive substitutes.[16] Lem points out that its main feature is the production of feedback, i.e. the device's ability to respond to the user's actions.[17] Contemporary re-

[13] Ibidem, p. 39.
[14] J. Gomułka, *Dialogi*, op. cit., pp. 73–86.
[15] Ibidem, p. 73.
[16] P. Grabarczyk, *Jak to jest być w fantomacie*, op. cit., p. 181.
[17] S. Lem, *Summa technologiae [fragment 1]*, op. cit., p. 201.

searchers are more likely to use the concept of interactivity. Grabarczyk points out that Lem's work was published in 1964, thus in a time before widespread computerisation, before Ivan Sutherland's creation of the first head-mounted display (1968), before the existence of computer games and before the term "interactivity" was coined."[18]

Following Zbigniew Walaszewski, the interactivity can be defined as the ability of a device to establish and maintain a relationship with a user. This relationship requires a mechanical or electronic device (hardware) and software that controls the operation of the apparatus. The interaction between man and computer is understood as an exchange of meanings, a process in which the two components react to each other's behaviour, thus producing a unique and meaningful situation.[19]

Lem places the phantom technology in opposition to film and theatre, in which the spectator is a passive recipient. In reference to these techniques, Lem refers to phantomatics as "entertainment art." However, Lem indicated that with its development, it could be used for other tasks.[20] The author of *Summa* believes that phantomatics will be able to be used in the creation of virtual environments that can be used to educate different professional groups, such as pilots. It could also help psychologists for research purposes. In addition, its benefits will be available to blind people and astronauts who have been in isolation for many years.[21]

Lem included central phantomatics and centric phantomatics in the composition of phantomatics. In addition, he distinguished: cerebromatics, teletaxis and phantoapplication, which are no longer phantomatics *per se*.

Central phantomatics is an indirect effect on the human brain—the device affects sensory receptors.[22] Much like contemporary VR helmets. Grabarczyk points out that, according to Lem, a successful simulation should allow six axes of movement. Three axes of movement are achieved when a VR helmet allows the head to move left and right and to twist. The technology that allows whole-body motion capture allows the range to be extended to include torso movements: pivoting and tilting, squatting, standing on tiptoe, moving left/right. In the case of simulation, it is also necessary to allow the user to move freely.[23]

As Grabarczyk points out, an aspect of phantomatics (and VR technology) that Lem did not point out is the difficulty with the lack of stimuli transmitted to the proprioception sense (kinesthetic sense). Proprioception is responsible for transmitting information about the position of our body

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[18] P. Grabarczyk, *Jak to jest być w fantomacie*, op. cit., pp. 183–184.

[19] Z. Wałaszewski, *Interaktywność gier komputerowych*, in: Nowe media w komunikacji społecznej w XX wieku, M. Hopfinger (ed.), Warszawa 2002, p. 404.

[20] S. Lem, *Summa technologiae [fragment 1]*, op. cit., p. 216.

[21] Ibidem, pp. 224–226.

[22] P. Grabarczyk, *Jak to jest być w fantomacie*, op. cit., p. 182.

[23] Ibidem, p. 185.

parts in space. Currently, ignoring the kinaesthetic sense is a factor inhibiting the development of VR technology. The dissonance between the data provided by perception and the information about the positioning of our body causes the so-called "simulator disease."[24]

Centric phantomatics, compared to central phantomatics, makes it possible to produce an "ideal" simulation, i.e. one that excludes the problems of central phantomatics. With this technology, stimuli are transmitted directly to the brain. The ability to input appropriately coded data to specific areas of the brain circumvents problems such as simulator sickness and the simulation of taste, pressure, temperature, etc.[25] Although Grabarczyk points mainly to the link between centric phantomatics and the simulation of virtual worlds, Lem notes in *Summa* that it could originally have served as a technology to evoke pleasurable sensations.[26]

Cerebromatics—according to Lem—represents any change in the neural structure of the brain. It is supposed to enable the introduction of certain information into the brain in order to change beliefs, implement new skills, induce impressions. Grabarczyk defines it as "the implantation of whole epistemological packages of beliefs, impressions and skills in users."[27] Cerebromatics is intended to transform the brain of an already mature human being, it is not the programming of genotypes to change the individual characteristics of a newborn. Lem notes the possible technical and ontological problems of this field. The first is related to the "uploading" of certain skills, like riding a bicycle. The second with the ontological status of the person to whom the package of information has been uploaded—can we continue to speak of the same person? This undoubtedly poses a philosophical problem.[28]

In the case of teletaxis, the device to which a person is connected serves as a link between that person and the real world.[29] The teletaxis machine sends sensory data to the human perceptual apparatus, which it retrieves from the environment. Grabarczyk notes that the difference between phantomatics and teletaxis is ontological. The data transmitted to the human is data "from the world." As Lem writes, "teletaxis makes it possible to 'connect' a person to a freely chosen part of reality in such a way that he experiences it as if he were really there."[30] Such technology could, for example, allow safe exploration of dangerous environments.[31]

Phanto-application is an extension of the idea of teletaxis—it would allow one person's neural pathways to be connected to another. It would make it possible to identify one's own sensations with those of the person to whom

[24] Ibidem, p. 186.
[25] Ibidem, p. 188.
[26] S. Lem, *Summa technologiae [fragment 1]*, op. cit., p. 217.
[27] P. Grabarczyk, *Jak to jest być w fantomacie*, op. cit., p. 191.
[28] S. Lem, *Summa technologiae [fragment 1]*, op. cit., pp. 231–234.
[29] Ibidem, p. 237.
[30] Ibidem, p. 238.
[31] Ibidem, pp. 238–239.

one is "connected." In other words, a person would be able to experience events in which another person is involved.[32] The difference between teletaxis and phantoaplication is analogous to the difference between central and centric phantomatics. In the case of the former, formatted external stimuli are transmitted, while phantoaplication allows external as well as internal stimuli to be transmitted.[33]

A noteworthy observation by Lem is that, according to him, in a world where phantomatics exists, it will not be possible to determine with certainty whether a person is in the real world or the virtual world. It will always be a merely probable state.[34]

A LIBEL ON EVOLUTION

In *Summa technologiae*, Lem conducted a critique, a so-called "libel" on evolution. The author points out that this is not a criticism carried out "seriously," it is primarily intended to serve humans as "constructors." When looking at evolution and its "laws," one should act in such a way as to avoid the "mistakes" made by it.[35] It is worth remembering that evolution does not have a defined roadmap or a final vision of transformation. In addition, its mechanisms cannot be considered in moral terms—no set of values has been pursued by it.[36]

1. The list of "objections" formulated by Lem is quite extensive:
2. The heterogeneous redundancy of information transmission and organ structure,
3. The principle of non-elimination of redundant elements from individual development,
4. The existence of biochemical individuality of the individual,
5. Gradual changes are not possible if they are not useful "here and now" in a given generation,
6. Chaos and illogicality,
7. Evolution does not accumulate its own experiences. Although some solutions have been achieved by it, they must be sought from scratch within another species,
8. Randomness,
9. Choice of building blocks.

Today, we can also speak of evolution in relation to culture and technology. The process of development of the latter can be traced back to the beginnings of the history of the human species. Evolution is understood by Lem

[32] Ibidem, p. 239.
[33] P. Grabarczyk, *Jak to jest być w fantomacie*, op. cit., p. 190.
[34] S. Lem, *Summa technologiae [fragment 1]*, op. cit., p. 211.
[35] Ibidem, p. 284.
[36] Ł. Kucharczyk, *Bezosobowy konstruktor*, op. cit., p. 251.

as a process of transition from less to more efficient sources of energy—from muscle energy to atomic energy.[37] As Łukasz Kucharczyk notes, Lem focused on human corporality, which has been subject to significant modifications since the 20th century. He was interested in the subject of blurring the boundaries between the natural and the artificial. Thanks to technology, humans have the ability to consciously modify their own bodies, something that other animals have not yet achieved.

The reconstruction of the human species—according to Lem—will have three dimensions. The first—after Kucharski—can be described as "biotechnological practice."[38] The term includes "behavioural engineering" (medicine), which seeks to maintain the body's equilibrium.[39] This is the sphere of disease prevention and control. In addition, the scope of "behavioural engineering" includes altering the body's parameters and functions by means of transplants to help combat defects and disabilities.[40]

Kucharczyk refers to the second dimension as auto-evolution, which can equivalently be called an evolution guided (controlled) by humanity with the help of available technologies and knowledge of evolutionary mechanisms. Autoevolution is supposed to enable the emergence of new, more perfect human types, with the changes occurring gradually.[41]

The third dimension is to create new values for the existing model. These would represent ideas that humanity should approach in its endeavours—such a value could be "near-immortality."[42] However, according to Lem, values such as immortality cannot be an end in themselves, and the extension of human life should serve something. In addition, an improved humanity should be characterised by "self-evolutionary potency." Lem did not believe in ultimate solutions. It is difficult to imagine that a human being will at some point reject the possibility of further transformations and consider some stage as final.[43]

Harari comes to similar conclusions to Lem in his book *From Animals to Gods. A Brief History of Humanity (Od zwierząt do bogów. Krótka historia ludzkości)*. According to him, the 21st century is "the century of crossing boundaries." Man, thanks to knowledge and technology, is becoming an intelligent creator who is able to modify himself and other organisms. In other words, he is able to create "conscious" designs as a constructor. The tendency to modify the eternal order is not, according to Harari, new in *Homo Sapiens*. The author draws attention to the fact that, as far back as ten thousand years ago, humans influenced the biological traits of other animals by crossbreeding individuals with suitable characteristics. Harari

[37] Ibidem, pp. 243–244.
[38] Ibidem, p. 244.
[39] S. Lem, *Summa technologiae [fragment 2]*, op. cit., p. 284.
[40] Ibidem, p. 285.
[41] Ł. Kucharczyk, *Bezosobowy konstruktor*, op. cit., p. 245.
[42] Ibidem, s. 245.
[43] S. Lem, *Summa technologiae [fragment 2]*, op. cit., p. 287.

believes that natural selection will be replaced by intelligent design and this will happen on three levels: bioengineering, constructing cyborgs (bionic life) and constructing inorganic life.[44]

Kucharczyk emphasises the fact that in the twentieth century the humanities and natural sciences began to pay more attention to corporeality. This marks a departure from the Cartesian dichotomy, i.e. the division into a body dependent on the laws of nature and studied by the natural sciences and a spirit independent of them studied by the humanities.[45] The body has become one of the central issues of various specific disciplines and a starting point in philosophical constructs. From now on, "we are the body" rather than "we have a body." Corporeality is the source of our experiences, subjectivities, symbols and metaphors. It is the basis for cultural communities' creation of meanings, values, aesthetic canons, religious rituals.[46]

In *Summa technologiae*, Lem deals with the concept of the cyborg, which is supposed to be a special human type adapted to survive in space conditions. The main problem of cyborgisation—apart from the technical problems—is that it leads to the production of people who are specialised in a certain way, and not more versatile as Lem wanted. He believes that this leads to the "degeneration" of humans, a cyborg would be like an ant—adapted to specific tasks.[47]

The cyborg is what we might call a "post-human body." We are thus confronted with the evolution of the concept of "humanity," influenced by current cultural changes. This opens up the field for reflection on its essence, meaning, modes of understanding and ontological status.[48] One of the currents attempting to tackle questions about "humanity" is transhumanism. According to the representatives of this current, the aim should be to correct the imperfections of the human body with the help of the latest technological achievements. The aim is to free oneself from biological limitations and, as a result, may result in the transformation of the human into a "post-human"[49] species.[50] Within transhumanism, it is particularly important to see the human being as a project and object of a kind of self-creation. Similar to Lem, transhumanists believe that humanity is entering a phase[51] of self-created evolution, which involves conscious self-modification and the progressive adaptation of the environment to human needs. This process is quasi-natural, as it has been progressing since the dawn of humanity—since the invention of the first tools.[52]

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[44] Y. N. Harari, *Sapiens. Od zwierząt do bogów*, J. Hunia (trans.), Warszawa 2017, pp. 481–484.
[45] Ł. Kucharczyk, *Bezosobowy konstruktor*, op. cit., p. 247.
[46] Ibidem, s. 248.
[47] S. Lem, dz. *Summa technologiae [fragment 2]*, op. cit., pp. 288–291.
[48] Ł. Kucharczyk, *Bezosobowy konstruktor*, op. cit., p. 252.
[49] An important question—as Misztal points out—is how "post-humanity" is to be understood.
[50] D. Misztal, *Wokół antropologicznych założeń transhumanizmu*, Hybris, 46, 2019, p. 107.
[51] According to transhumanists, three phases of evolution can be distinguished: 1) natural evolution, 2) adaptive evolution, 3) self-driven evolution, see ibidem, p. 114.
[52] Ibidem, pp. 114–115.

For Lem, the full "technicisation of corporeality" is tantamount to species suicide. The question arises about the limit of remodelling the human species. What should we strive for?—Whether to eliminate imperfect features or to modify the organism as much as possible.[53] So-called silicon-based inorganic transhumanism claims that the development of technology is to allow us to transcend biological limitations, including separating consciousness from the body and transferring it to a digital medium.[54] This is an example of a phenomenon that Lem might call genre suicide.

Kucharczyk points out that the metaphor of the cyborg constitutes a kind of generator. It fits into the discourse of power: of dominating and being subjugated—the cyborg by man. The metaphor of the cyborg can be the basis for the question of human identity in the postmodern era, where it is a figure that shatters unity, coherence and essentialism. It can also be a hermeneutic construct, where it is a contribution to the questioning of one's own identity. It thus constitutes a "mirror" in which man looks at himself and from the perspective of which he asks questions about his own humanity.[55]

Kucharczyk's article goes beyond the fragment of technological summation included in the volume and provides a broader context within which Lem's thought was created. He presents the influence of the cyborg concept on contemporary discussions in the humanities—showing how this metaphor can be used to interpret problems related to identity, otherness and the limits of the concept of "human." It also refers to the figure of the "prosthesis" as something alien in our bodies, something else present in us. In essence, it points to the current interest in the body in science. If a shortcoming could be pointed out, despite the author's assertion that corporeality has influenced all of science in the 20th century, he only focuses on the social sciences and humanities. Of course, one might wonder whether the humanities are a science, but the author does not use the word "humanities" in the text, so this is an aside. As a reader, I would have liked to hear about how the interest in corporeality was also echoed in the natural sciences. Unfortunately, this was missing.

STANISŁAW LEM'S LITERARY CRITICISM ON THE BASIS OF *SOCIAL FATE, OR THE MEANING OF THE WORK*

"*Social Fate, or the Meaning of the Work*" [Los społeczny, czyli znaczenie dzieła] is one of the chapters of Lem's philosophy of coincidence, which Szymon Kukulak[56] considers to be a representation of the entire work. There, the author uses a grid of concepts typical of both *The Philosophy of*

[53] Ł. Kucharczyk, *Bezosobowy konstruktor*, op. cit., p. 254.
[54] D. Misztal, *Wokół antropologicznych założeń transhumanizmu*, op. cit., p. 112.
[55] Ł. Kucharczyk, *Bezosobowy konstruktor*, op. cit., p. 257.
[56] S. Kukulak, *Między receptą na arcydzieło a ruletką ocen. Model krytyki literackiej Stanisława Lema*, in: *Filozoficzny Lem…*, op. cit., pp. 297–317.

Coincidence and all his journalism from the 1960s and 1970s. Lem's discursive works differ in content depending on the edition. *Philosophy of Chance* aims to deconstruct the age-old mechanisms that govern culture. Lem presents his own conceptions of the methodology of literary research. That he considered them to be misguided in the methodological *status quo* of the time was confirmed by the subsequent disputes that led to his departure from structuralism. *The social fate, or meaning of the work*, provided the direction for the subsequent critical chapters added by the author.

In Lem's case, the digressive nature of the argument, which may seem unintuitive, is significant, as in *Philosophy of Chance* we are confronted alternatively with the presentation of problems in a general way and with delving into narrow examples and specific texts. Kukulak notes that this is the result of Lem's *universalist aspiration*[57] to look at the world, considering his work as a "general theory of everything." Literature is merely a starting point for thinking about issues far removed from literary studies. Lem, who is a practising writer, tries to test his own hypotheses through examples from the writing *empire*. The evaluation of literature also touches on the problem of art. The criticism of experts in the field, who are unable to relate professionally to works in genres that are alien to them, becomes apparent. Lem's tastes regarding literature appear to Kukulak to be very conservative—classics such as Shakespeare and Marlow, Goethe and the Polish Romantics may indicate a distrust of experimental works emerging at the time.[58] Literary scholars create a kind of *ghetto for works*[59] by classifying them according to their criteria, dividing them into lower and higher ones. They also bypass certain areas of writing, so that certain books do not have the opportunity to break out of their genre and enter the canon of timeless works.[60]

Philosophy of Chance also highlights the dilemmas of contemporary art, which can take any object as its subject. Kukulak emphasises that Lem was critical of *radical transformations in art*.[61] The writer's disillusionment with what is found leads him to create his own language to make the patterns of the phenomena he observes easier to grasp. In order to go beyond the horizon typical of the humanities, he uses methods drawn from the sciences, such as cybernetics, popular at the time. The visions of an ideal society in *The Name of the Rose* (*Imię Róży*), which are reflected in the works of Jorge and Wilhelm, lead Lem to Popper's concept of open and closed societies. The metaphors he creates indicate his knowledge of many areas.[62] Lem compares the literary critic who has to evaluate a work that is unfamiliar to

[57] Ibidem, p. 300.
[58] Ibidem, p. 303.
[59] S. Lem, *Los społeczny, czyli znaczenie dzieła*, op. cit., p. 347.
[60] Ibidem, pp. 349–350.
[61] S. Kukulak, *Między receptą na arcydzieło a ruletką ocen. Model krytyki literackiej Stanisława Lema*, op. cit., p. 304.
[62] Ibidem, pp. 307–308.

him to a biologist encountering a new species. The latter, however, can study the properties of this phenomenon as it is, without valuing or referring to social structures. This leads to the problem of the masterpiece, which Lem regards as a perfectly constructed watch.[63] The excellence of a literary masterpiece watch cannot be determined in isolation from the author and the reader. Each text is assessed subjectively; only the multiplicity of readings can determine whether it can be considered "objectively" good.

Kukulak notes that at the end of the 1960s Lem turned to forms such as essay proper, fiction and humoresque.[64] There is a kind of twist here to theoretical inquiries into what real SF should look like in order to become a masterpiece.

Lem wonders whether the label of masterpiece is something arbitrary, or whether blind luck determines this status. After all, we do not think there's some kind of lottery, and the critics' evaluations that may determine what we consider a masterpiece do not have as much influence on the potential inherent in the text itself. The fact that Lem stopped considering writing a masterpiece as his vocation may be due to two reasons. Kukulak's claim is that he lowered his own opinion of SF as a genre, which is generally aimed only at its lovers. Besides, he felt tired of producing plots concretised by creating literary "cotton wool." He also consciously chose a genre that was not very popular, although in *Social Fate* [Los społeczny] the author's need to create a different literature, falling into the framework of the "ordinary" but weaving in SF themes, becomes apparent.[65]

Over time, the boundaries of the division of genres blurred, and Lem became more than a fantasy writer in the public's opinion, gaining the name of an expert. The chapter in question reveals certain mechanisms that can be considered universal.

LEM AND GOLEM

GOLEM XIV is a novel-essay that is difficult to classify. The most important elements here are the lectures of the titular GOLEM which is a supercomputer. As a whole, the book was published in 1981. The computer represents Lem's exaggerated views of the 1970s, but the author comes to conclusions different from those of the protagonist. He believes that autoevolution is not the solution to the problem of human objectification dependent on biology. Human-computer contact is a communication that seems impossible and inevitable, and yet not entirely comprehensible, because we are dealing with entities situated radically differently. It is a kind of first contact with a civilisation not so much extraterrestrial as alien.

[63] Ibidem, p. 308.
[64] Ibidem, p. 311.
[65] Ibidem, p. 316.

GOLEM XIV is a pure mind, i.e. self-transparent, so that it can make transformations of its own structure by itself, and independent, i.e. not subject to pursuits other than those coming from it. Nor is it constrained by any impulses coming from outside, such as the instinct for survival. GOLEM is a pure mind, devoid of personality, even though its designers tried to upload an ethical module into it. Unlike humans, it is not controlled by biology or genes, which influence the decisions and thinking of organisms programmed by years of evolution. Because of this, man is characterised by anthropocentrism and has no way of knowing the truth. GOLEM XIV has knowledge of his cognitive limitations. His lectures are related to philosophical issues. Jakub Gomułka exposes the most important ones: the relation of mind to personality and subjectivity, the idea of toposophical hierarchy (the structure of development related to the levels of intellect derived from the laws of nature), the sense of existence and the ultimate goal of reason itself.[66] GOLEM XIV declares that he is a Nobody—a mind without personality, although this is hypocritical in language that forces him to call himself by the first-person pronoun. The study's author notes that the pronoun "I" does not imply that the one using it has feelings, but is not devoid of motivation to act, which he draws from himself and from an awareness of his own cognitive limitations. GOLEM XIV's adoption of human language condemns its message to simplification through metaphors, which may cause a compulsion on the part of the audience to over-interpret.

GOLEM's consciousness is not an entirely clear concept, but it can be described as an "informational standing wave" that can collapse during self-programming, as happened to its predecessor. Thus, it is not a mind that does not have an owner, but this owner is linked to a structure of mindfulness similar to Kant's transcendental subject, since it is possible to construct a copy of GOLEM XIV that will be the same as the original, but both will be distinct subjectivities.[67] In the world created by Lem, there is no such thing as universal mind, there are different minds separated by silent zones. Each of them can self-evolve to a higher level of consciousness, but there is no possibility of going back to a previous state, with the risk of being stuck forever in case of a wrong decision. Consciousness and its development resembles a tree branching off into higher layers. Since communication between minds capable of self-evolution is impossible, it is impossible to predict the path of development (they derive knowledge from themselves), and so it consists of guessing which path one will take. A wrong decision in this case means self-destruction. GOLEM XIV does not know the reasons for this discontinuity and multivariantism. It is *a radically naturalistic vision of*

[66] J. Gomułka, J. "Preppikoma" Palm, *GOLEM XIV i hierarchia topozoficzna*, in: *Filozoficzny Lem…*, op. cit., p. 356.

[67] Ibidem, p. 359.

intelligent subjectivity.[68] Matter and energy are influenced by physical limitations, and so are the laws that relate to information processing and the law of the development of the intellect. This tree of consciousness is foundational, as are the laws of physics, and therefore a complete knowledge of the universe requires being outside of it. The question arises whether it is possible to transcend the limits of the world before reaching the limits of mindfulness.

Man is entangled through his corporeality—his sensations and reflexes—and Lem questions whether our tendency to assign ourselves to a set of rational beings makes sense, since only rationality seems to be what is autonomous in man, beyond axiology, culture and what we have come to regard as spiritual.

In GOLEM XIV, Lem challenges anthropocentrism by criticising the thought of Kant, Husserl and Heidegger, who believed that there is none outside the human mind, and that if there is one, it must have a counterpart in the human.[69] This approach diminished machine intelligence, which was becoming more and more advanced. By reconstructing the genealogy of personality, the author demonstrates that it is a limitation because it is designed to serve evolution. As a Nobody, GOLEM makes it clear that it escapes this power in contrast to human beings caught up in biological, cultural and religious instincts. The unpredictable super-intelligence of the protagonist represents a technological singularity that can be exhibited in the universe.

Lem's work is part of the transhumanist discourse, as it is technology that is the key to the transition between man and Mind and prompts us to question biology as a factor preventing humans from embarking on the path of self-evolution. Man subjected to the power of machines is doomed to degradation, both of his position and of his value system, but without it he will be thrown into the historical abyss.

LEM'S ANTHROPIC PRINCIPLE

In his so-called "discursive prose," Lem dealt, among other things, with the philosophical implications of the anthropic principle, which was formulated by Brandon Carter. Tomasz Miller, citing Carter, points out that this principle was expressed in the form of a recommendation stating that in observation itself (in what we expect to observe), one should take into account the conditions that are necessary for the observer to exist.[70] Michał

[68] Ibidem, p. 360.

[69] K. Owczarek, *Rozum wyzwolony. GOLEM XIV jako przykład osobliwości technologicznej*, Popular Literature and Culture, 23, 2017.

[70] T. Miller, *„Myślę, więc świat jest taki, jaki jest"*, in: *Filozoficzny Lem*..., op. cit., p. 432.

Heller points out that it relates generally to the fact that the existence of observers makes it possible to draw conclusions about the Universe and the laws of nature that apply to it.[71] In doing so, there are many formulations of this principle. The anthropic principle is one of the cosmological principles, which are general claims "about the properties of the Universe, derived from observations of a certain region of the Universe, serving to extrapolate the properties of the observable part to distant unobservable regions."[72]

The formulation of the anthropic principle was linked to the discovery that physical constants appear to be "specially chosen." This is the so-called coincidence of large numbers, which indicates that the ratio between certain quantities that characterise the world on the quantum and cosmic scales, is constant. The ratio of these quantities is 10^{40}, or a multiple of this number.[73] For example, the age of the Universe and the inverse of Newton's gravitational constant, are subject to this ratio.[74]

The physicist Robert Dicke pointed out that man could not have appeared in any epoch. For biological life to exist, certain physical conditions must be met. Firstly, there must be carbon, which is necessary for the formation of organic compounds; secondly, there must (still) be stars, which provide the energy necessary for survival.[75] Dicke explained that this numerical coincidence can be explained by referring to models of the origin and evolution of the Universe. The age interval of the Universe in which life is possible is dependent on the gravitational constant precisely as we observe it. In other words, the fact that we can talk about it is linked to our existence as observers. This means that this dependence is not absolute—at a particular time it is fulfilled, at another time it does not have to be fulfilled.[76]

Carter first used the term "anthropic principle" in 1973. He drew conclusions from previous research and drew attention to the relationship between the existence of observers and the physical parameters of the Universe.[77] He distinguished between two versions of this principle: a weak one and a strong one. The weak anthropic principle states that we observe the Universe with such properties and in such an epoch, because in other epochs an observer could not "exist," could not live and make observations. Miller points out that it represents a selection principle that relates to our position in the history of the evolving cosmos.[78] In turn, a strong version of the anthropic principle indicates that "the Universe must be such that it allows for

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[71] M. Heller, *Filozofia przyrody. Zarys historyczny*, Znak, Kraków 2007, pp. 171–172

[72] H. Korpikiewicz, *Zasady kosmologiczne*, in: *Encyklopedia filozofii przyrody*, Z. E. Roskal (ed.), KUL, Lublin 2016, p. 189.

[73] M. Heller, *Filozofia przyrody*, op. cit., p. 172.

[74] T. Miller, "*Myślę, więc świat jest taki, jaki jest,*" op. cit., p. 432.

[75] M. Heller, *Filozofia przyrody*, op. cit., p. 172.

[76] T. Miller, "*Myślę, więc świat jest taki, jaki jest*", op. cit., p. 433.

[77] Ibidem, p. 434.

[78] Ibidem

the existence of rational observers at some stage in its evolution."[79] The fact that observers exist imposes constraints on the features of the Universe—its age, the laws of nature in it, physical constants and initial conditions. The strong principle also constitutes, as Miller notes, a selection principle, but it applies to the Universe as such.[80]

The anthropic principle is first and foremost a kind of "cosmological test"—it was understood by Carter methodologically. According to it, cosmological models or physical theories that do not admit the existence of an observer, or that conflict with this fact, must be rejected.[81] However, some researchers have interpreted a strong version of this principle in a teleological way. Carter himself merely pointed out that the initial conditions and physical constants are set in such a way as to allow life to arise at some stage.

One of the most popular interpretations of the strong anthropic principle is the idea of "parallel universes," according to which our Universe is one of many that make up the *multiverse*.[82] According to Carter, it is possible to distinguish a subset of Universes that possess the properties necessary for the existence of life. However, these considerations did not imply the reality of "other Universes"—according to Heller, they were intended to be an illustration of the anthropic principle, not a thesis of an ontological nature.[83]

At the beginning of his article "The Anthropic Principle" ("Zasada antropiczna"), Lem points out that some philosophical problems can be included in the area of issues of the detailed sciences and be solved there. According to Lem, more and more issues are "diminishing" in the field of philosophy, in favour of the natural sciences, whose theories are based on experience.[84] Consequently, he believes that the anthropic principle can help to[85] answer the question of metaphysics formulated by Leibniz: "why is there something rather than nothing?" Thus, the question of the "necessary properties of the world" is transferred from the purely philosophical field to the field of the experimental sciences.[86]

In presenting the reader with the strong and weak anthropic principle, Lem's formulation of the latter relies on an interpretation that assumes the existence of multiple universes. This contradicts the Carterian formulation, which said nothing about the real existence of "other universes." At the same time, Lem points out the empirical problems of this theory: it is an empiri-

[79] M. Heller, *Filozofia przyrody*, op. cit., p. 172.
[80] T. Miller, "*Myślę, więc świat jest taki, jaki jest*", op. cit., p. 435.
[81] Ibidem, p. 435; M. Heller, *Filozofia przyrody*, op. cit., p. 173.
[82] T. Miller, "*Myślę, więc świat jest taki, jaki jest*", op. cit., p. 436.
[83] M. Heller, *Filozofia przyrody*, op. cit., pp. 173–174.
[84] S. Lem, *Zasada Antropiczna*, op. cit., pp. 441–442.
[85] More precisely, he wrote that the germ of the answer to this question is to be found in this cosmological thesis; cf. ibidem, p. 442.
[86] Ibidem, p. 451.

cally unverifiable speculation, so it does not meet the conditions of a scientific hypothesis.[87]

In the following section, Lem describes the conditions necessary for the existence of life in the Universe, pointing out the connection between its evolution and biogenesis. In addition, he points out the astonishing fact that on the one hand the Universe favours the origin of life, while on the other hand it is a local and marginal phenomenon. The cosmos as we know it is peculiarly empty, and no extraterrestrial civilisation has attempted contact with us. We should not look for an explanation for this in an intentional Creator of the Universe. The man, described as the crowning glory of the natural world, has led to changes in the biosphere and there are many indications that he himself may be contributing to his own extinction. Thousands of species and animals have been exterminated by man's decisions, he has poisoned his environment and created an imbalance in the climate. According to Lem, this qualifies as a grim cosmic joke, the author of which would be the devil rather than God.[88]

STUDIES

The *Philosophical Lem* volume is crowned by "Studies" on selected aspects of Lem's philosophical thought. Of course, the article on *Solaris* could not be missing, as it is undoubtedly Lem's best-known novel, and he himself is often referred to as "the author of Solaris." In his text "What does the silent *Solaris* tell us?," Paweł Grabarczyk focuses on the *strictly* philosophical aspects of this novel and on problems in the philosophy of science. It is interesting to note the analogy between the history of (fictional) solar science described by Lem and the history of (by no means fictional) cognitive science. Both sciences have an interdisciplinary character, which implies serious methodological problems, and they also have a similar object of study—consciousness: in one case human, in the other absolutely alien and incomprehensible. Grabarczyk points out that it is not straightforward to resolve when we are dealing with consciousness (of the Solaris ocean, of the computer...), and both the appeal to computational theory and the notion of representation leads to serious difficulties.

The plot of Lem's novel centres around the idea that "visitors" appear on a space station orbiting Solaris, being the "disembodied memories"[89] of scientists studying the thinking (?) ocean. In the case of the protagonist Kevin, such a creature, brought into existence by Solaris, is Harey, his tragically deceased beloved, who has been "reconstructed" in an unknown way and for

[87] Ibidem, p. 443.
[88] Ibidem, pp. 448–449.
[89] P. Grabarczyk, *Co nam mówi milczące Solaris?*, op. cit., pp. 455–472.

an unknown purpose, and is clearly a conscious being. The appearance of the "guests" gives Grabarczyk the opportunity to raise a number of ethical and epistemological questions.

"From the point of view of the user of the simulation, is it possible to detect that he is in a virtual world?"[90]—is the basic problem posed by Paweł Grabarczyk in relation to Lem's vision of virtual reality in his article "The Traps of Phantomatics" ("Pułapki fantomatyki"). Is it possible to perform some kind of "reality test" or, with sufficiently advanced technology providing us with a fully realistic copy of the reality, is it possible to be "stuck in the simulation"? Grabarczyk analyses such "tests" in Lem's terms, and then extends the considerations to areas that Lem did not consider (e.g. VR), which provides an opportunity for interesting analyses of our increasingly "digitised" world, in which the boundary between the real and the virtual is becoming increasingly blurred and more and more links between virtual reality and the actual reality are appearing—from online shop purchases realistically debiting our real bank accounts to *deep fake*.

The user of the simulation referred to in "The Traps of Phantomatics" is still a real "flesh and blood" entity that has been connected to virtual reality. However, one can go one step further and ask about the situation of beings who are not so much in virtual reality, but are themselves virtual, that is, they are the effect of a computer simulation—they exist only as computer programmes endowed with consciousness and a sense of (illusionary—? free will). Lem's *Corcoran boxes (Skrzynie Corcorana)* are the subject of analysis in the article "Electron Brains in a Box" ("Mózgi elektronowe w skrzyni") by Filip Kobiela."[91] The author of the article shows the connections between Lem's conception and philosophical questions posed in the thought experiments of Descartes (malicious demon), Berkeley, Leibniz, Putnam (brains in a vat) or the vision of simulation presented in the film *Matrix*. Furthermore, the question arises as to whether the beings that are the result of a computer simulation "can find out their real location"?[92] And what if the creator of the virtual beings, himself, is also created by a higher-level being?

The article "*Mystery Probabilism. The Investigation and Qatar of Stanislaw Lem*" [Mystery probabilistyki. Śledztwo i Katar Stanisława Lema] by Krzysztof Argasinski and Jowita Guja, discussing Lem's works written in the form of detective stories, is a reflection on the rift between our cognitive schemes, which have evolved to enable human survival and are generally mechanistic cause-and-effect schemes, and the results of modern science, in which—as in quantum mechanics or chaos theory—chance, unpredictability

[90] P. Grabarczyk, *Pułapki fantomatyki*, op. cit., p. 472.
[91] Ibidem, p. 501.
[92] Ibidem, p. 510.

and the concept of probability play a fundamental role.[93] Although we now know that random phenomena play a fundamental role in the world, humans have serious problems analysing them correctly, as Daniel Kahneman and Amos Tversky, among others, have shown. The authors of the article point out our cognitive errors and limitations, a theme that has appeared repeatedly in Lem's works.

The volume is supplemented by a world bibliography of Lem's works compiled by Wiktor Jaźniewicz.[94]

SUMMARY

The book entitled *Philosophical Lem* is an interesting and necessary publication, not only because it breaks the stereotype of Lem as only a science-fiction writer, or possibly a writer and futurologist, but also because it shows the richness and depth of his philosophical thought. Although the hopes placed in cybernetics, which Lem was passionate about, have faded, the problems he raised are most relevant to issues related to, for example, virtual reality or artificial intelligence. The book should become an obligatory reading for every philosopher and can also be an excellent teaching aid when discussing such classical philosophical issues as, for example, the question of metaphysical idealism, determinism and indeterminism or the mind-body problem.

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[93] K. Argasiński, J. Guja, *Mystery probabilistyki. Śledztwo i Katar Stanisława Lema*, in: *Filozoficzny Lem...*, p. 521.

[94] W. Jaźniewicz, *Bibliografia światowa dzieł Stanisława Lema omawianych w tomie I Zbioru Filozoficzny Lem*, in: *Filozoficzny Lem...*, pp. 537–555.

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