# The Modern Theory of Cognition

This book is the continuation of two previous titles issued by Cambridge Scholars: *A theory of General Semiotics* (2015) and *From Semiotics towards the Philosophical Metaphysics* (2017). In the first book the author spoke about semiotics proper; in the second, how his semiotic views led him to the philosophy of knowledge. This book is devoted to philosophy itself. It presents the philosophy of cognition in a new light, speaking of the three consecutive periods of cognitive activity during our evolution as a civilization, and describes implications of this theory when it is applied in practical life.

# The Modern Theory of Cognition

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Cambridge
Scholars
Publishing

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This book first published 2021

Cambridge Scholars Publishing

Lady Stephenson Library, Newcastle upon Tyne, NE6 2PA, UK

British Library Cataloguing in Publication Data
A catalogue record for this book is available from the British Library



ISBN (10): 1-5275-6935-7
ISBN (13): 978-1-5275-6935-5

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# INTRODUCTION

The modern philosophy of knowledge, in my opinion, is in a deep crisis. It endlessly repeats the assets of traditional approaches to cognition, laid down by the ancient Greeks, and is guided by the metaphysics adopted at the same time. Therefore, in some cases, it is either openly rejected by modern professional philosophers and scientists of other specialties, or is silently ignored. I will cite only two examples of a critical attitude to the existing philosophy of knowledge. One of them belongs to the outstanding scientist of our time, the recently deceased Stephen Hawking, and the second – to the well-known philosopher Susan Haack.

When I opened Stephen Hawking and Leonard Mlodinov's book, "The Grand Design", I was literally taken aback from the very first lines, because I read there the following statement:

> "Traditionally these are questions for philosophy, but *philosophy is dead* (italics is mine – A.S.). Philosophy has not kept up with modern developments in science, particularly physics. Scientists have become the bearers of the torch of discovery in our quest for knowledge. The purpose of this book is to give the answers that are suggested by recent discoveries and theoretical advances. They lead us to a new picture of the universe and our place in it that is very different from the traditional one, and different even from the picture we might have painted just a decade or two ago..." [1]

I was discouraged by the words that "philosophy is dead" today. One of the leading physicists of the planet, an outstanding preacher and pro-herald of scientific discoveries of the last decades, states that today's philosophy does not help him to interpret the latest data on the structure of the universe and the role of man in the overall picture of the world. After all, people have been engaged in philos-

[1] Hawking S. & Mlodinov L. *The Grand Design.* London, Bantam Books, 2001, p. 13.

ophy for a few thousand years, and even to-day a lot of people claim to fulfill their philosophical duty in explaining the latest scientific achievements. Yet, on reflection, I understood that the authors of the book are to a certain extent right with their adjudication – for contemporary physicists and different other professionals the ancient philosophical views are not necessary. They simply do not need them, because the conclusions of scholars and the existing philosophical postulates coincide to a very small extent – they sort of going parallel without intersecting with each other. Most often, philosophers simply take the latest achievements of scientists and try to adapt them post factum to existing philosophical constructions. What can give such an approach to stimulate new discoveries? And, whether is it necessary for science, which basically feeds on its own internal sources, its own latest innovations and their introduction into practical life?

However, the conclusion that scientists themselves, within the framework of their specific science, become the bearer of philosophical knowledge exclusively, does not suit me. From this follows that physicists will give a picture of the world in the light of the postulates they derived, biologists will present their interpretation to us, scientists of other specialties will add additional shades to it, etc. How to summarize such different points of view and such a patchwork knowledge into a common picture of the existing world for all people? We just get a variety of dishes that will be impossible to bring together into a digestible whole. And again, the whole philosophy will remain a simple interpreter of the results already obtained, but in no way a pre – conceived menu with appropriate criteria for the selection of dishes.

Philosophy, fortunately, has not concealed anywhere, neither it disappeared at all. A vivid proof of this is the same book by Hawking and Mlodinov, which I quoted above. It belongs in the same measure to both physics and philosophy; only it simply interprets the latest achievements of physics, trying to give them a general philosophical character. In fact, the authors are trying to create modern philosophy instead of the old one, which does not suit them, but they do it exclusively on the material of physics and the sciences adjacent to it. This approach seems to me to be insufficient and not covering those philosophical revelations to which one can

arrive, focusing on the general scientific approach to the design of modern philosophy, which is based not only on the conclusions of specific sciences. Without denying the importance of new physical results, including the achievements of cosmology and some other scientific fields, I believe that, concentrating only on them, we will not be able to formulate the necessary philosophical generalizations concerning human existence as a whole. This requires creating a new type of philosophy based on postulates others than before.

By the way, some professional philosophers hold the same point of view. In support of my assertions I can refer to the long campaign that is being pursued for, so to speak, "saving philosophy from its final disappearance from the scientific arena" by the philosopher from Miami – Susan Haack. In her recent article, "The Genuine Problem: Can Philosophy Be Saved?" She writes:

> Yes, something has rotted into the very essence of philosophy. According to the remark of my colleague: "Our profession is in rapid decline (in a spin)". To the question "How long can this fall go on?" the answer was: "To heaven itself".[2]

The reason for the trouble Haack considers the following:

> How did this happen? Some of the problems are the result of changes in the management of universities affecting the whole academy: the burgeoning bureaucracy, the ever – increasing stress on "productivity," the ever-spreading culture of grants – and – research – projects, the ever-growing reliance on hopelessly flawed surrogate measures of the quality of intellectual work, the obsession with "prestige," and so on. Some of the problems are the result of changes in academic publishing: the ever-more-extensive reach of enormous, predatory presses that treat authors as fungible content – providers whose rights in their work they can gobble up and sell on, the ever-increasing intrusiveness of copy – editors dedicated to ensuring that everyone write the same deadly, deadpan academic prose, the endless demands of a time-and energy-wasting

[2] Susan Haack (born 1945) is Distinguished Professor in the Humanities, Cooper Senior Scholar in Arts and Sciences, Professor of Philosophy, and Professor of Law at the University of Miami.

> peer – review process by now not only relentlessly conventional but also, sometimes, outright corrupt, and so forth.[3]

Haack cites many other important reasons for the declining popularity of today's philosophy, and she also criticizes calls to replace philosophy with simple replacements from the achievements of natural scientific disciplines:

> I don't believe *either* that we can simply hand philosophical questions over to the sciences to resolve, *or* that only questions resoluble by the sciences are legitimate.[4]

The book you are reading is devoted to the creation of a new form and content of the philosophy of knowledge. Having practicing semiotics for several decades, I decided to contribute to the construction of modern philosophy of cognition, which is significantly different from the previous one (I want to emphasize that I deal only with problems of the philosophy of knowledge – epistemology). Besides, I am going to build a philosophy of cognition which would not only be an interpreter of the results already achieved in various sciences, but that would give initial impulses for the organization of newly undertaken research in any branch of science, not only in physics or another solitary field of knowledge.

Along with the substantial novelty in the contents of the book, I want to underline the style of presentation of the problems discussed in it. The book is written in a popular format and is addressed to a non – professional of the public in relation to the philosophy. Although it will be a question of very serious questions concerning the very foundations of our existence, it should be understandable for the ordinary and far from discussing the philosophical problems audience. I will try to write clearly, concisely and clearly, which is not synonymous with a simplified interpretation of the subject of discussion. The reader may be incompetent in philosophy, but he ought to be interested enough to understand what is being said and try to get into the essence of the matter. Bearing in

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[3] Haack Susan. *The Real Question: Can Philosophy Be Saved?*

[4] At: http://againstprofphil.org/susan-haacks-the-real-question-can-philosophy-be-saved/

mind what has been mentioned, I proceed to discuss the substantive issues of our theme in the following chapters.

# ONE

# HOW I DEFINE WHAT PHILOSOPHY IS

By philosophy, I understand the *reasoning (discourse) about the basic parameters of a certain scientific or even some practical problem, expressed logically and with convincing argumentation*. The problem may be central to human existence or into secondary plane (say, whether it is useful to wash the feet before bedtime) – it does not matter. It is important that it be correctly delivered and logically reasoned. Thus, in my understanding of philosophy, the emphasis is not on the importance of the topic under discussion, but on the nature of the discussion – whether it is an accidentally thrown remark on a minor issue for the speaker (or in writing), or a detailed and convincing presentation of the subject matter. In the latter case, in my opinion, one can speak of a philosophical approach to the topic touched upon and of philosophizing in general.

Philosophy exists even when not only correct and scientifically confirmed views are expressed (although they are, of course, preferable), but always, when the reasoning represents a complete and convincingly well-founded position of something that affirms a person, the so-called *common sense*. Most of the reasoning of this kind may not end with a practically significant result; however, they also belong to philosophy.

Thus, my understanding of philosophy completely coincides with the meaning of the concept of "philosophy", which the ancient Greeks gave to him, when they came up with this word. *Phileo* (love) + *sophia* (wisdom) simply signified aversion to idle talk and the need for an intelligent person to turn to a reasoned discussion, using suitable arguments. From the standpoint of today's knowledge accumulated by mankind the views and arguments of the ancient Greeks sometimes seem naive to us, if not absurd, but from the position of the level of knowledge that was achieved in their time,

they, of course, belong to philosophy. The desire of the ancient Greeks to seriously discuss any problems of life distinguished them from other peoples of the time and provided them with a place in the pantheon of human wisdom. It also awakened interest in this kind of reasoning throughout the entire subsequent history of civilization, which is why philosophy firmly occupied such an honorable place among the disciplines studied – both in amateur disputes and in the course of professional occupations.

Yet this continued only until the time, when the arguments could have remained not necessarily scientifically confirmed, but convincing enough for the adoption of a thesis. When the same thesis was finally given a scientific explanation, philosophy was forced to retreat, leaving the relevant space to a corresponding science. Gradually, philosophy retreated further and further to the periphery; and now the time has come when interest in the problems of general philosophy has completely disappeared in sufficiently advanced sciences. Does this mean that philosophy should disappear altogether, replaced from the scientific arena by the achievements of the concrete sciences?

From my point of view – not at all. And this is due to two circumstances:

a) because, although in some sciences its shagreen skin is reduced, new problems must be put on the agenda, which, before receiving their final scientific interpretation, should be content with philosophical explanations (this situation will always exist);
b) it is possible to modernize the old philosophical ideas, making them relevant to our time (this book is just dedicated to this aspect of the question).

We will illustrate the said with some examples, firstly, about the need for philosophy in the development of specific sciences. Let us discuss Strabo (c. 64/63 BC. E. – c. 23/24 AD.), the author of the almost completely preserved “Geography” in 17 books, which serves as the best source for studying the geography of the ancient world. Here is how he imagined the space of the Earth known in his time, which was then called *ecumene*:

> ... First of all, I will say that we and our predecessors (one of whom was Hipparch) were right in considering Homer the founder of the science of geography. After all, Homer surpassed all people of the ancient and new times not only with the high merit of his poetry, but, as I think, with knowledge of the conditions of social life. By virtue of this, he not only took care of depicting events, but in order to learn as many facts as possible and tell descendants about them, he sought to understand them with the geography of both individual countries and the entire inhabited world, both land and sea. Otherwise, he could not have reached the extreme limits of the inhabited world, depicting them completely in his description. <...>
>
> The fact that the inhabited world is an island can be inferred from the demonstrations of our feelings and from experience. After all, everywhere, where only man can reach the limits of the earth, there is the sea, and we call this sea the Ocean. <...> For example, the eastern part of the inhabited world (Indian) and western (Iberian and Mavrusian) can be completely rounded and continue the journey for a long distance along the northern and eastern regions. <...> Homer knows and accurately describes the most remote parts of the inhabited world and what surrounds it; he is also perfect in the areas of the Mediterranean Sea ...[5]

From the above passage it becomes clear that the ancient Greeks and Romans knew only a small part of our planet. Their included the range of the Mediterranean Sea and Europe adjoining it from the north, and from the east some lands to India. They considered the round and surrounded by water, which was designated as the Ocean. Strabo calls the source of his conclusions "the expressions of our feelings and experience," which was extremely progressive for that time, but since this experience extended only to a small part of the planet, the rest was left to the imagination and was a projection of already known geographical facts. Thus, the central part of "Geography" was a more or less authentic description of the territory known to the Greeks and Romans, and everything else was an extrapolation of already known data to still unexplored lands, which

[5] The text is cited from: Strabo. GEOGRAPHY in 17 books. Reprint re production of the text of the 1964 edition. M .: Ladomir, 1994. At: http://ancientrome.ru/antlitr/t.htm?a=1260010000 (June 2018). The translation from Russian is mine – *A.S.*

were interpreted as a natural extension, similar to already familiar material.

All subsequent geography was a study of previously unknown to Europeans territories, a description in which the previous conclusions were gradually given way to the newly established data. This continued until our time, when the planet turned out to be thoroughly studied and where there was no place for the former imaginary geographical philosophy. However, new unexplored areas and, above all that which is called the cosmos, have yet to be mastered and explored. Today, there are quite new philosophical arguments on this subject, still not supported by established experience, which are supposed to be replaced by solid knowledge in the future. And then again new philosophical problems will arise – and so on, ad infinitum, simply because our universe has no boundaries.

The following example concerns ideas about the structure of matter and the smallest particle of all things. As you know, Democritus spoke about this, and he introduced the concept of the *atom*, which means in Greek "indivisible" (that is, it cannot be further divided).

> With Democritus, an atom is necessarily an indivisible small particle of matter, which, by virtue of its indivisibility, is eternal. The only property of an atom is always to be: after all, it has nothing to disintegrate into. Therefore, the atoms, according to Democritus, are the origin, the world basis, the real reality. However, due to the small size we cannot see them. How is it known about their existence? Thanks to the thought we conjecture that the world consists of a multitude of atoms; they compose what we see, which are things.[6]

Though the atoms are invisible, because they are very small, they are still material. On this basis representatives of the Soviet Marxist-Leninist ideology declared Democritus the father of materialism, which opposed idealistic philosophy. In fact, this is not true, because the atoms in the teachings of Democritus embodied the idea of the origin. This idea was almost leading in ancient Greek natural philosophy – that was a principle that underlid all things.

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[6] At: http://eurasialand.ru/txt/gusev/15.htm The translation from Russian is mine – *A.S.*

Thales had water as such a source, Anaximenes had air, Anaximander had infinite matter (*apeiron*), Pythagoras had a number, Heraclitus had "world law" (Logos). In Democritus, by analogy with the aforementioned philosophers, these are invisible atoms that revolve in emptiness, collide and form all that is visible on earth – a typical idealistic construction of a purely mechanistic nature.

As subsequent science has shown, atoms are by no means indivisible and are not a part, universal for all other things. Came their scientific description, and purely theoretical construction of Democritus was ordered to disappear. This does not mean that the philosophy on this issue has ended its existence. Based on the study of atoms and its constituent particles, a new philosophy of building and functioning of microparticles, quantum mechanics, appeared, which changed our ideas about the world and replaced the old mechanistic ideas of the ancients with the modern description of the world order. I believe that such a "fate of the Phoenix" is typical for the philosophy of knowledge, and that it will constantly accompany the development of scientific thought. That is, philosophical constructions will be constantly checked by new researches and either confirmed or disproved. In the latter case, the previous statements will be rejected, and new philosophical beginnings will take their place.

In continuation of our discussion one could cite many other examples, say, the first theory of diseases (humoral), derived by the ancient Greeks and based on the balance of fluids in the human body. This theory has existed for more than a thousand years and was a theoretical justification of practical medicine in many European countries. In fact, this whole theory and the practice based on it had no real basis and today it is mentioned only as a curious historical episode. All these and similar facts reveal the same content of the corresponding stage in the development of the philosophy of knowledge in ancient Greece: it was no longer religious in the full sense of the word, but also not scientific in the current understanding of today. Most of them were manifestations of the new stage in the development of the theory of knowledge, which was called *metaphysical* by Auguste Comte (1798 – 1857). This stage no longer rested on religious dogma, but was not yet focused entirely on the purely objective content of the subject of study, revealed by scientific means. This was a transitional stage between the mythological

(religious) stage of acquiring knowledge and the *scientific approach* to it. Comte wrote about this stage of cognition:

> It should be noted that in the metaphysical stage the speculative part is at first extremely exaggerated due to the persistent desire to argue instead of to observe ...[7]

This stage relies on pure theorizing, which by analogy is derived from things usually observed by simple induction: you see this and that, and therefore, in our case, the same thing happens. Thinking by analogy is necessary for normal human behavior, but the fact is that the very analogy in the definition of natural laws for the ancient Greeks was the most limited and gave very few chances to come to the correct conclusions. They simply knew very little: in the case of geography, knowledge extended to a small territory of their habitat, and in the case of the humoral theory of diseases, they were completely based on pure guesses, since the structure of the human body and the laws of its functioning were not sufficiently studied. Therefore, I call the course of their thinking a *simple mechanistic transfer of events* known by the eye to new areas of research. Such course of reasoning often dominates the daily practice of communication, but it is absolutely not suitable in science; It was the task of scientists to get rid of it in the transition to truly scientific ways of acquiring knowledge.

I will allow myself to cite as a concrete example of ancient Greek philosophizing an excerpt from the work of Plutarch (c. 46 AD – c. 127), entitled "*Almost everything about the Moon*" or "About the face seen on the disk of the Moon". Sulla is one of the participants in the conversation, but most of the thoughts belong to the author of the essay:

> It fits in with my tale, – noted Sulla, – and is borrowed from it. But, of course, if you have something to add to these, all accessible and all told opinions about the face of the moon, then I suppose I will listen to it with pleasure and immediately." – "Why not add," I replied, "when the incomprehensibility of these opinions make us turn to the ancients. After all, as with long – term illnesses, people,

[7] At: http://rushist.com/index.php/philosophical-articles/2930-filosofiya-ogyusta-konta-kratko

abandoning ordinary medications and habitual lifestyles, turn to cleansing rites, talismans and dreams, and in intractable, not providing an outcome of research, it is necessary to test new ways, not to look down on them, but just to take the old and in every way seek out the truth.

For example, you, of course, immediately see that the absurd assertion that the image seen on the moon is the result of a painful state of vision, which cannot stand due to the weakness of [its] luster, which we call blinding. It does not take into account that such a phenomenon should have occurred rather from the sun, which is acute and burning (for example, Empedocles well points to the difference between the two stars: "Poorly ripe sun and gentle moon," calling the moon gentle and painless). In addition, it does not explain why those who have poor and weak eyesight do not notice any variety of figure on the moon, and the moon shines for them like a smooth and full disk; on the contrary, those who have a strong and sharp vision, better distinguish the details, understand the facial features and better grasp the diversity. I suppose, on the contrary, it would be obvious that the image should be sharper where the damage is stronger, if only the phenomenon was a painful condition of the eye. The irregularity of [illumination] also speaks against this: the face represents not a continuous, consistent shadow, but, as Agehesianakt aptly put it:

> The whole [moon] circumference shines with fire,
> and in the middle
> It looks like a girl's eye, dark blue,
> And smooth brow; which is quite like a face.

And, indeed, the shadow spaces that go around all fit under the light ones and, conversely, the latter close to the first, even being cut off from them, and generally intertwine with the others in a way that is similar to a hand – drawn picture. In this circumstance Aristotle, apparently, not without reason, stands against your Clearch. After all, Clearch is "your" because he was a friend of ancient Aristotle, although he perverted many of the provisions of peripatetics.[8]

It took the work of hundreds of ingenious minds to get rid of such a primitive approach, in order to fully switch to the "positive"

[8] At: http://selena-luna.ru/knigi-j-like-vidimom-na-diske-luny

(by Comte's definition) experimental research in specific sciences. Only they can give us an objective picture of what lies at the basis of a particular science. Such is the philosophical content of any particular science, which in its development is compelled to feed on philosophical arguments. At any stage of the study we cannot know everything about the subject under study, and then we close these lacunae with philosophical arguments. Philosophical nourishment will be needed at any stage of scientific progress, and it manifests itself in each individual science in its own way. In mathematics, the theory of sets and transfinite numbers of George Cantor (1845 – 1918) arose; and at first it did not fit into the system of former mathematical views. It was opposed by a very serious opposition, which ultimately did not work; and Kantor's theory won its place in the standard model of modern mathematics. Accordingly, some philosophical constructions concerning purely mathematical problems have changed. The theory of Darwin (1809 – 1882) appeared in biology, which completely changed the entire philosophical landscape of this and related sciences, still, only inside this and the sciences adjoining it. So I call this hypostasis of philosophy a concrete philosophy of knowledge, since it refers only to a limited range of scientific research

Along with this kind of philosophy, there is *general philosophy of knowledge*. It concerns the framework of any cognition and highlights its integral parts in a complete scheme and complete construction. The subject of this book will be just the problems of the general theory of knowledge. The experience of building a general theory from its individual applications is ubiquitous; it is a routine procedure of scientific knowledge. There were, for example, various manifestations of electricity, they were investigated and the basic laws and dimensions of this phenomenon were derived in general (Faraday, James Maxwell et al.). Another example: there are several thousand natural languages in the world and there is no single language for everyone. But studying the characteristics of existing languages and dialects, one can deduce the basic laws of a hypothetical single language and, choosing the most promising variant, try to build an artificial language that could serve everyone. Such an attempt was made by Lazar Zamenhof (1859 – 1917), and

appeared Esperanto – a very successful and compact language, easy to learn and use.

In my scientific baggage, there is also experience of this kind: from branch semiotics (signs in separate sciences and professional occupations) I derived theoretical sources for building "general semiotics", which I consider my main scientific achievement. I want to do something similar for the general philosophy of cognition, but with one significant amendment. I am not going to recreate the philosophy of knowledge *ab initio* (from the very beginning), as in the case of writing general semiotics, since the philosophy of knowledge in its original version already exists and is well known. Unfortunally, it is used exclusively in its original form, which I consider to be wrong and outdated – and that is the main reason for the unpopularity of philosophy in the modern scientific community. Therefore, I see my task not as the creation of a philosophical theory of knowledge from zero, but the modernization of the old version for the new conditions of scientific research that have appeared and existed for the last several hundred years.

The beginnings of the general theory of knowledge were laid down again by the ancient Greeks. They appeared in the works of Plato, Aristotle, and other philosophers; later they were repeatedly discussed in scientific works throughout the centuries and remained unshakable in their foundations until our time. As far as we know, Plato was the first to proclaim that in creating new knowledge one cannot rely only on obvious, observable facts; the latter should be generalized and treated as a general truth. Only in this case can we predict events that have not yet happened. The thing did not exist, but we can already indicate it as a general scheme of the phenomena under study. And here Plato used the mechanistic thinking common for the ancient Greek philosophy, which forced him to make *ideas* real.

Like Democritus in relation to atoms, Plato spoke of his ideas as prototypes of everything that exists, and even indicated that they were gathered in one place over the heavens, which was called Hyperurania.

> Plato believes that our thinking spirit goes back to the "ideas", the eternal prototype of the existing. The world of ideas, according to

> the teachings of Plato, exists independently, separately from the world of things and from human thoughts. Their existence is perpetual calm. The world of ideas resides in a special region of space, separate from the sensible world, supersensible.[9]

When a person dies, his soul leaves the dead body and goes on a journey through heaven. There it visits Hyperurania and becomes acquainted with the immortal ideas of all things. Having received a new mortal shell, the soul guides the replenishment of our mental baggage: recalling the immortal idea, it gives it to the surrounding objects and events that people face. From here, they say, similar objects and phenomena, similar to all the others like them, appear – the same things performing the same functions. Beautiful and logical, but how far from reality! However, this doctrine gave rise to the whole philosophy of knowledge; it continues the ancient philosophical tradition of mental dominance that has existed from the time immemorial until now. Traditionally it is believed, that it gave rise to that branch of philosophy, which was called *idealism*.

The morals at that time in Ancient Greece were quite tolerant, and many philosophers, co-temporaries of Plato or those who lived after him, allowed themselves to disagree with him. Thus, for example, Epicurus (342/341 BC – 271/270 BC) saw the foundations of cognition in a completely different way:

> The main and primary criterion of truth Epicurus saw in our sense data. Epicurus was quite definite – thus, in a letter to Herodotus (meaning one of his students, and not the "father of history," who was a century and a half older than Epicurus. – A. S.), he insisted that "we must hold onto sensations in everything…" Epicurus allows himself to disagree both with Plato and with Aristotle who saw in the mind something other than sensations, the main source of our knowledge of the world. Epicurus does not admit such a second source of human knowledge about the world and about himself. <...> ... all other criteria of knowledge, except sensations, are secondary to him. Old knowledge also resulted not from experience in general, but only from its own experience, allowing us to better navigate the world around us, to recognize objects similar

[9] At: http://rushist.com/index.php/philosophical-articles/2214-mir-idej-i-mir-veshchej-u-platona

> and different among themselves... Thus, our knowledge supposedly was "anticipated" by knowledge that we had already received from previous sensations: "Knowing in advance" does not mean, as in Plato, that comparing two objects, for example, in length, implies the existence of an overactive idea of equality. "The anticipation was an impression, the source of which had also been sensations."[10]

This position of Epicurus later turned into materialism, and in all the following philosophy it constructed the structure, which incarcerated the philosophy of knowledge in a very rigid frame: *there is material basis that opposes and precludes its ideal display in our mind*. For adherents of idealism, the idea (thought) is decisive and guiding; for the followers of materialistic doctrine, matter is primary. It, and only it, initially and completely subordinates to itself the reflection of matter in the brain. In its extreme terms, this thesis acquires the features of religious worship: "matter is primary, thought is secondary" or "being determines consciousness". Sometimes it even turns into a brutally ideological slogan like "whoever is not with us is against us".

I hasten to assure the readers that I completely object to the opposition of *material vs. ideal* as an initial point of reference. The contradiction really exists and it defines the content of human existence. I object only to the naive interpretation of this kind of opposition, against considering it as hostile to each other, and (what is very important) against the primitive for our time understanding of the material world as a single and indivisible entity. About two thousand years have passed since the ancient Greek civilization and for us to continue to consider the material world as one and indissoluble means a death sentence for today's philosophy of knowledge. What I mean, you will understand from further discussion.

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[10] Chanishev A.N. Course of lectures on ancient and middle-aged philosophy. Moscow, Highschool Publishing House, 1991, pp. 80-81. The translation from Russian is mine – *A.S.* (Чанышев А.Н. *Курс лекций по древней и средневековой философии.* Москва, «Высшая школа», 1991).

# TWO

# WHAT IS ONTOLOGICAL REALITY? HOW IT ORIGINATED AND DEVELOPED?

Naturally, the analysis of ontological reality (that is, our material environment and ourselves) constitutes the first and main stage of this study. Not a single living organism, even the most simple and underdeveloped, can remain indifferent to the surrounding reality. An interesting experiment was invented by an American biologist Smith:

> A slipper (single cell organism) was placed in a narrow tube with a microscopic section. The tube section was so small that in order to move in it in the direction of the biotic agent (light), this microscopic body had to change its position, hitting the tube walls. At the beginning of the experiment, it took the slipper about 3 – 5 minutes to turn, but if such experiments were repeated many times over 10 – 12 hours, the turn began to be performed much faster, and at the end, it only took 1 – 2 seconds. Thus, under the influence of new conditions, a new "skill" was developed, which proceeded 180 – 200 times faster than the initial reaction.[11]

And this is in a unicellular organism that does not even have a nervous system and which responds to external stimuli with its entire protoplasm. The creation and complication of the nervous system contributed to the acceleration and fundamental improvement of all species reactions to external stimuli. This process got the best device in humans, where it was crowned with the ability to direct observation and analysis of impressions coming from outside. Moreover, we have long since passed from passive observation and

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[11] Luria A.R. Lectures on General Phychology. St. Peterburg, "Peter Publishing House", 2004, p. 38.

perception to the creation of special conditions for this, that is, to experiment. Apparently, living organisms could be distinguished from non – living objects precisely by the criterion of response to stimuli coming from outside: it is absent with inanimate matter; in living things, starting with plants, it is present. Gradually, the ability of people to observe and analyze the ascertained facts develops into an organized process of learning and knowledge, which is rightly considered to be our main asset.

I wrote above that any nation, tribe, people sought to explain how the universe in which they found themselves and lived was conceived and developed. Here are some myths about this, borrowed from S. V. Morozov's generalizing work, which brought them together for comparison and presentation.

> In ancient Egypt, it was believed that the Earth was a rectangular valley in the middle of which the Nile flows. The valley is surrounded by mountains. There the Heavenly Nile flows, and the prow of the Sun – god is gliding on it. The flat iron sky rests on four pillars <...>

> In ancient Babylon (about 1500 BC), the Earth was represented as a convex island floating in the world ocean. The sky descends on the earth's surface – a solid stone vault to which the stars, planets are attached; the Sun and the Moon move along it. In the morning the sun rises to the sky through one gate, and in the evening descends through the other. The sky separates the lower waters, that is, the ocean surrounding the earth, from the upper, rainwater. The sky itself consists of three floors. The gods live there. The Earth also consists of three layers. At the top – people, on the average – the god of the sea and wisdom Ea, at the bottom – the kingdom of the dead. Due to the combat between the gods, the body of the goddess Tiamat was divided into two parts, and from them the sky and the earth were created. The sun, the moon, the planets, the stars are fortified in the sky <...>

> Among the ancient Slavs, white light (the world) is born from darkness. In the darkness there appears originally only Rod – the progenitor, the Father of the gods. He gives birth to the kingdom of heaven, and under it – what is down from it. The umbilical cord is cut by a rainbow ... the Ocean – Sea is separated from the heavenly

waters by a stone firmament; Three vaults are erected in the sky, the light is separated from the darkness, the truth – from the false. Rod then gives birth to Earth, but it falls down into the abyss and is buried in the Ocean. Then the Sun, the Moon and the stars are born; dawns, nights, winds; rain, snow, hail, thunder with lightning. These are all parts of Rod's body. Next, heavens are born, and all that is lower. Rod is the father and mother of the gods, he was born by himself and will be born again. He is all gods and all of the heavens, what was and what will be, what is born, and what will be born. In other words, Rod is the past, the present, the future, which are simultaneous.

In ancient China, the Earth was considered to be a flat rectangle. Above it on the pillars is a round sky. The angry dragon bent the central pillar, the Earth leaned to the east, that is why all rivers flow eastward. And the heavens leaned onto the other side so the glowing stars move from east to west. Chines thought that each day had its own sun; consequently, Day and Sun were marked with one hieroglyph. Much later, on the eve of our era, there appeared a new myth. In the ancient time, the Earth and the Heavens were one chaotic matter. This something (like an egg) split after 18000 years into a light (sky) and dark (earth) halves. Inside the egg was Pangu, a short man dressed in a bear skin. On the head he had two horns. In one hand he held a hammer, and in the other – a chisel. With their help, during 18,000 years he separated heavens from the earth; He created the sun, the moon and the stars. Pangu was the creator of the universe. He himself was generated by chaos and extracted from there by yang and yin.[12]

Enough is enough. My quotes relate to the mythological perception of the world, peculiar to any people who are in the initial stage of knowledge of the surrounding reality. Subsequently, this kind of reality gained the name of ontological reality – from the Greek words *ontos* (real, existing) + *logos* (concept, teaching). As I wrote above, according to Auguste Comte, who is considered to be the

[12] Morozov S.V. Volumetric approach to the consideration of models of the Solar system. In: "Reality and Subject", 2001, vol. 5, no. 4, p. 49-54. Rendering from Russian is mine – *A.S.* At: https://www.google.com/search?source=hp&ei=swkFW8anOcL3UL_ruKgM&q

founder of modern sociology, the mythological thinking was the universal first step in the occurrence of human knowledge. It, of course, refers to the pre-scientific stage of development of the spiritual sphere of our being. It is important to note that an undeveloped consciousness was still focused on some important details taken from real life – on the nature of the place where a particular people lived, on the visible Sun, Moon, stars, on their movement in space and on some of the observed and characteristic properties for them. Real objects and events demanded explanations from the seeking human mind, which was relevant to every nation, although the explanations themselves were the fruit of rich human fantasy and were mechanically transferred from some known material to unknown.

According to the same Auguste Comte, the human consciousness passed through three successive stages in its development.

> Investigating the development of the human mind in various fields, Comte derived the law of three stages of its development, or three different theoretical states: theological, metaphysical, and positive. This means that the human mind, due to its nature, uses first theological (religious) thinking, where spontaneously arising functions openly dominate, even having no evidence. Then comes metaphysical (philosophical, abstract – theoretical) thinking, with the usual predominance of abstractions or entities taken as reality. And, finally, a positive (scientific) method of thinking. Each of these three states forms the basis of the entire social organization and permeates all aspects of social life. According to Comte, the state of technology, crafts, industry, etc. also depends on the general state of human knowledge. The law of the three stages of historical development is at the same time the law of the development of all mankind.[13]

The ancient Greek philosophy, judging by the works of its most prominent representatives, is a typical example of the second stage of Auguste Comte – i.e. metaphysical, when the ontological reality was presented much richer and more diverse than at the mythological stage. It appears not only more reasonable, but also proposed for broad discussion with possible non – coincident results. There is no

[13] At: http://www.newsocio.ru/nspgs-539-1.html

longer a single obligatory perception of the phenomena studied, as at the theological stage; they, accordingly, are presented as problems, and not as matter that is not subject to discussion, with a single – orthodox and categorical – conclusion.

At this stage of development of human consciousness, it was already possible to discuss the idea and express different views on it, but the argument remained primitive, borrowed from ordinary life experience, and not from the immanent properties of the material under study. I have already given an example of such an argument in Democritus for the selection of the smallest and further not given to produce material particles – atoms: divide and divide, until you can continue to do this physically. Approximately the same was the course of reasoning in Epicurus considering the theory of Plato's ideas. He agreed that common for all identical examples ideas existed (many thinkers disagreed with this). Yet he said that they were not in Hyperurania, somewhere above the heavens, as Plato argued: "All objects exist as if in two ways: by themselves, primarily, and, secondly, as the finest real images constantly flowing from them." The latter were called by him "idols". Those "idols" existed as objectively as the things that emitted them. Here again, we observe a mechanistic approach: everything happens simply by the example of natural and observable processes.

"The idea of communion with other similar objects and phenomena is invisibly present in each individual incarnation, – said Epicurus, – and when a person sees a single copy, this idea invisibly flies to him in his thought." That is, it exists in material embodiment, and in this modus it moves into our brain – a sort of naive materialism, being characteristic of the whole of ancient Greek philosophy. It is curious that the Pythagoreans, who took numbers as the basis of all things, imagined them quite sensually, having visual formats. Thus, for them unit appeared as a point, two as a line, three, as a plane, four as a body (the first body was a pyramid). The Pythagoreans distinguished linear, flat and solid numbers.

The same was with Plato: our soul, which after the death of a person flies in the open and visits Hyperurania, where it gets acquainted with ideas common to a whole class of objects. This is idealism, but with the same primitive filling. There was nothing surprising in this; the Greeks still knew very little and explained,

relying on what they knew, and what they observed all the time. Nevertheless, it was a decisive step in the advancement from the mythological (religious) era, but, of course, still very far from the current scientific reasoning, when not only problems are highlighted in a new way, but also the approach to their explanation is based on scientific analysis, and not on human speculative ruminations.

Another thing is surprising: mankind, who has long mastered scientific approaches to any problem that has arisen, has so far used in philosophy parameters for discussing scientific problems established by the ancient Greeks. In my opinion, this only harms the cause. After all, in our scientific research we have long ago switched to completely different standards. Starting with Roger Bacon, Galileo Galilei and many others, humanity is constantly trying to build a common advanced scientific paradigm, while in philosophy we are still stubbornly using ancient Greek parameters to analyze any problem; parameters that have long been overcome by the achievements of specific sciences.

What do I mean? I want to say that the advancement of individual sciences, which build their paradigms each in its own way, no longer fits with the philosophical approach, which was originally intended for the ancient Greek level of knowledge and was quite sufficient for the science of that time. But times have changed, and we have to sing other songs. In fact, I now touch upon the main issue raised in this book. The philosophy of knowledge, in my deepest conviction, must answer three main questions: *What* exactly are we studying? Why should we study this? and *How* should we do this? These three questions are relevant for the construction of any science and they are also cardinal for the general philosophy of knowledge. On the basis of the progress of individual sciences, we are obliged to build the general theory of achievements in the field of acquiring and accumulating knowledge in general – for the whole of humanity at this stage of its development. I argue that the paradigms of specific sciences, where more, where less, reflect breakthroughs in the accumulation of knowledge of this particular scientific branch. But the general branch of the theory of knowledge stopped at the level, which ancient Greek offered for it.

In relation to the three stages of the attainment of knowledge proposed by Auguste Comte, this can be deciphered as follows. In

the mythological period, everything rested on the fantasies and imaginations of people who dealt with such issues. There is not and cannot be any gap between the content of the subject and the methods adopted for this at this first period. In the second stage of acquiring knowledge, advanced thinkers suggested that, along with accepted fantasies (they were all of religious origin), they also focused on obvious life manifestations. They, mainly, operated on them in their reasoning – you see and feel this and that and also you see the circumstances that usually accompany them. It means that the first one depends on the second one and it should be considered the cause of the first and the change in it. What natural elements dominate the world? Earth, fire, air, and water – let us lay upon them the function of being the basis of everything and everyone.

It was not difficult to defend such a position – there were more than enough examples and there was also enough desire and cunning. After all, it was all wisely, no more. It was enough for several thousand years and would be enough for the same period if, in the course of practical manipulations, people did not reach that stage of argumentation, which was no longer content with simple theorizing. "Why should I blindly believe Aristotle in his description of the human body and the disposition of soul and other objects within it?" – asked Andreas Vesalius, and began secretly dissecting the corpses of animals and people. After years of experience of this kind, he came to know the true structure of the human body and released the first anatomical atlas, becoming the progenitor of modern anatomy. "Why, in fact, should I take Aristotle's opinion on the belief that the speed of falling objects depends on their weight, and wouldn't I try to test it by experience?" – thought Galileo and made a series of experiments throwing various objects from a height and measuring the time of their downfall. In this way, he laid the foundation of true mechanics of motion, genuine in the strictly scientific sense of the word.

So did scientists in all other sciences. In specially designed experiments, they tracked the manifestations of the phenomena that interested them, built their hypotheses, which, again, were subject to mandatory verification in practice. In this manner humanity has achieved unprecedented success and is constantly moving further. Yet philosophy is marking time, because it is limited by the frame-

work suitable only for the initial steps of the scientific approach. This is what she says: “What you are researching is material reality. Your thoughts are a necessary idealistic supplement. Their correct ratio will ensure the success of your further progress. Act!” But this is not an operational response, just a calling slogan.

Today, this is not enough also because material reality, which was previously perceived as a kind of indissoluble integrity, has become unequal. It consists not only of ontology. In the course of scientific progress, scientists have created *semiotic reality* and learned how to engage in their studies *virtual reality*, which was previously unrestricted and subject to any human fantasies and dreams. But, if we take these two new realities into account, doesn’t this change the whole cognitive landscape and will not it give us new resources for scientific planning and organization of all our research activities? Of course, it will, and that is what I shall talk about throughout this book, starting with analysis of the ontological reality in this chapter. So, come on!

We will consider as *ontological reality our material environment and ourselves*. True, the semiotic (sign) reality is also material, but these two incarnations of reality can be easily distinguished from each other by their origin, the topic, which I will discuss below. It seems to me that the above definition of ontological reality should not cause objections. Therefore, the ontological reality is manifested in the form of material objects, phenomena and events around and within us. Appearing in this world, each of us gets in touch with ontological reality and is trying to adapt to it in order to improve self well-being, like the infusorium (slipper) I wrote about above. To adapt to the environment, we are forced to study it and, to the extent possible, not only behave ourselves in accordance with the properties, established in the course of research, but also try to make it most comfortable for our being, that is, to reconstruct it.

Take as an example the device of dwellings. Even animals, birds and insects have learned not only to adapt to already prepared shelters from weather and enemies, but also to improve these shelters. Living creatures not only use indentations, burrows and caves to live in them, but also actively improve them. People do it much better; throughout the development of civilization, we have learned to build wonderful homes. The same shifts occur on other fronts of