

The Study and Conception of Thinking (A View from History, Methodology, and the Humanities)

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Abstract. The article is devoted to a rethinking of the phenomenon of thinking in the context of historical-philosophical conceptualizations, the contemporary crisis of rationality, and the search for new methodological foundations for its study. The author draws on his personal experience of participating in the Moscow Methodological Circle and a polemical dialogue with the ideas of G.P. Shchedrovitsky, which gives the work a reflexive and problem-oriented tone.

The first part of the article identifies three key historical conceptualizations of thinking: the Aristotelian (as correct ways of reasoning and cognition), the Cartesian (as the «right mind» governed by clear and distinct ideas), and the methodological (Kant – Shchedrovitsky), where thinking is understood as an activity-based and semiotic formation, subject not only to description but also to constitution. Special attention is paid to a critical analysis of Shchedrovitsky's program, which, in the author's opinion, managed to establish the activity-based and semiotic layer of thinking but failed to propose and implement a holistic historical-cultural reconstruction of thinking.

The main part of the work proposes the author's approach to studying thinking as a discursive practice that changes discretely with the shift of cultural epochs. The author formulates five essential characteristics of thinking: 1) discursive-activity nature; 2) semiotic mediation; 3) two-layeredness (the presence of a managing layer – norms, rules, patterns, methodology); 4) conditionality by external factors and presence of cultural consequences; 5) reflexive conceptualization of thinking itself. These propositions are illustrated by a detailed analysis of Galileo's work *Discourses...*, where thinking appears as a complex polylogue of schemes, hypotheses, proofs, and experiments.

In the final part of the article, the author addresses contemporary challenges: the decline of interest in "correct thinking," the crisis of Kantian reason, and Hannah Arendt's question about the connection between thinking and morality. He concludes that thinking is inherently value-laden; however, in conditions of a plurality of discourses and propaganda, navigating it has become extremely difficult, which actualizes the role of philosophy and methodology as modern navigators for a meaningful life.

Keywords: thinking, consciousness, reason, conception, reasoning, discourse, culture, history, philosophy, science

I. Introduction

The author's interest in studying thinking arose under the influence of Georgy Petrovich Shchedrovitsky, who dreamed of creating an institute of thinking and placed the concept of thinking at the foundation of his research on activity and methodology. In the 1960s and 1970s, when the author underwent his academic training in the «Moscow Methodological Circle» (abbreviated as MMC), the role of thinking and its study in philosophy were considered very significant, partly because in our country, starting from the fifties,

there was a deficit of conceptual knowledge and models of contemporary philosophical thinking. For instance, Merab Mamardashvili recalls in an interview: «We were people deprived of information, sources, deprived of connections and continuity of culture, the global flow, deprived of the opportunity to use the advantages of cooperation, when you use what others do... And for us, the logical aspect of 'Capital' was simply material for thought, which we did not need to invent in our poverty; it was given as a model of intellectual work. This is not Marxism; it is the text of Marx's personal thought, the text of a thinker named Marx... I did not go through Marxism, but through the imprint left on me by Marx's personal thought» [13, pp. 48-49].

It is different now; less and less is said about thinking. Why is that, interestingly? In those years, it seemed that thinking was not only the main instrument of science but also an intellectual navigator in life's vicissitudes. For example, in Michel Foucault's works *Care of the Self* and *Philosophy of Subjectivity*, the discussion was precisely about this; in general, he believed that it is through thinking that a person can successfully deal with their problems [27]. And in Martin Heidegger's famous book «*Conversation on a Country Road*», the master of philosophy says that «we are still not thinking», hinting that it is precisely weak thinking that is the cause of many of our troubles.

The author wondered whether the roots of these convictions lie in I. Kant's work «*What Does It Mean to Orient Oneself in Thinking?*», which asserts that a person must follow the navigation of their reason, behind which the figure of the Creator is perceived. And simultaneously, Kant believes, a person as an individual is free, yet he listens to the arguments of reason (duty). «Thus, the pure faith of reason is a guide or compass by which the speculative thinker can orient himself in the realm of supersensible objects, following the paths of reason, and a person with ordinary but morally healthy reason can chart his course, both theoretically and practically, in full accordance with his destiny. And it is precisely this faith of reason that must be placed at the foundation of any other faith, and moreover, of any revelation. The concept of God and even the certainty of His existence can exist solely in reason, originate only from it, and come to us not through suggestion (*Eingebung*), nor through communication from the mouth of a person, however high their authority may be <...> Thus, freedom in thinking, if it wants to act independently of the laws of reason, ultimately destroys itself» [10].

However, the peculiarity and, perhaps, partly the tragedy of our time is that the majority of those on whom modern life on our planet depends are acting less and less rationally, and the formula-metaphor «this is a mad world» has become commonplace. It would seem, why not reasonably limit one's needs and power, not compromise, not act considering the interests of another, not eliminate nuclear weapons, etc., etc.? But no, humanity is inexorably sliding into the abyss. Reason, according to Kant, governs thinking, but has this competence not faded in the history of the last two centuries? Albert Schweitzer already suspected this circumstance. «In accordance with its highest purpose,» he writes, «philosophy is the leader that guides our reason in general... But in the hour of doom, the watchman who should have warned us fell asleep, and we could not fight for our culture» [11, p. 114].

There is also the highly relevant question in our difficult times (though, when were they simple?): can thinking contribute to the proper development of consciousness, including moral consciousness? Hannah Arendt discusses this question in her article «*Thinking and Moral Considerations*». «I was struck by,» she writes, «this complete absence of thinking. Does it follow that one can commit evil — not merely commit sins of omission, but actively sin — not only in the absence of 'base motives' (as it is called in law), but having no motives at all, following no specific desire or interest? That 'evil nature' (however we define it), a quality by which one 'should become a villain,' is not a necessary condition for atrocities? That our ability to judge, to distinguish right and wrong, beautiful and ugly, depends on our ability to think? That the inability to think and the pernicious refusal of what is commonly called conscience accompany each other? The question that arose before me was this: can the activity of thinking as such, the habit of reflecting and questioning everything that happens, regardless of content and completely independent of results, be a condition sufficient to prevent people from doing evil?» [1].

The problems raised here (why interest in the study of thinking has declined, what this study allows us to understand today, what factors and conditions determine thinking, whether reason still directs it, what thinking essentially is, and also Arendt's question about the meaning of its absence in many modern people) compel the author to return once more to the discussion of thinking. He understands, and will try to take into

account, that the legacy of not only philosophical classics but also of G.P. Shchedrovitsky is the subject of a huge number of articles and monographs in recent years. At the same time, naturally, the author will use the results of his own research on thinking but will try to rethink them anew. Furthermore, comparative analysis and methodology, including problematization and conceptualization, as well as reflection on the results of the author's own genesis of thinking, will be employed.

Three Historical Conceptualizations of Thinking: Correct Ways of Reasoning and Cognition (Aristotle), the Right Mind (Descartes), Methodology (Kant, Shchedrovitsky)

The Stagirite, completing the program of Parmenides, understands thinking as correct ways of obtaining knowledge («epistemes»), either in ordinary reasoning or in reasoning serving the tasks of cognition. He understands correctness in two ways: on the one hand, as following the rules of thinking he himself formulated (Analytics); on the other, as the correct actions of an individual, which in the course of reasoning do not lead to contradictions and allow for obtaining true knowledge in cognition.

«Concerning thinking,» writes Aristotle, «since it appears to be distinct from sense perceptions and seems, on the one hand, to involve imagination, and on the other, judgment <...> The thinking of indivisible things pertains to that realm where there can be no falsehood. But where both falsehood and truth occur is a combination of concepts <...> The error lies precisely in combination... And it is the mind that combines these separate [representations] into a unity» [3, pp. 102, 103].

In his book «Thinking: Essence and Development», the author shows that the Greeks invented a new way of obtaining knowledge, using some knowledge in the individual's activity to obtain others (reasoning and proofs were based on this). Thought, realizing itself in reasoning, appeared as a path with an unknown end, as wandering, sometimes consciously directed towards the good, but more often towards selfish gain. For the Sophists, this state of affairs was advantageous and seemed normal. For the Eleatics and later Plato, the wandering of thought with an unclear end or even the emergence of aporias was perceived as madness, as a destruction of life ("beingness"). Parmenides finds a solution, probably suggested by ancient politics: thought must be subordinated to an unchanging law understandable to all; Parmenides understands this law ontologically.

Being, either there or here, is unshakable everywhere,
Equal to itself everywhere, one in the limit of judgment [17]

Plato, on the one hand, relies on the convictions of the Eleatics, that is, he believes that thought must proceed from a firm, unchanging foundation and not depend on the reasoner; on the other hand, he is forced to listen to the Sophists as well, in the sense that he acknowledges the multiplicity of knowledge and representations of being. He limits Parmenides' being to objects defined in definition («ideas»). In fact, Platonic ideas are ways of norming reasoning, where definitions, understood as independent entities, serve as norms. [18, pp. 83-86] Against this, as is known, Aristotle objected, stating that Socrates, in giving definitions, «did not attribute separate existence to the common aspects of things, nor to definitions; however, the proponents of the theory of ideas isolated these aspects and called such realities ideas» [2, p. 223].

It is unlikely that the Stagirite's criticism here was correct, for the Platonic idea represented a solution to the problem of constructing an object of consistent, true knowledge. By defining this object, the reasoner constructed an «ideal object» (i.e., ascribed fixed characteristics to the object, which he then adhered to throughout the reasoning or proof). The idea was precisely the model of such a construction; «not admitting,» writes Plato in Parmenides, «an ever self-identical idea for each of the existing things, a person will not find where to direct thought, and will thereby destroy the very possibility of reasoning» [15, p. 357].

Aristotle completes the norming of reasoning and cognition: besides definitions, he formulates rules and categories; the latter were used as ontological foundations for the ideal objects created on the basis of Aristotle's rules. In other words, the Stagirite replaces Platonic ideas with categories. By introducing the concept

of thinking, Aristotle solves two tasks. On the one hand, he inclines the Greeks to reason and prove, following the rules of logic; on the other hand, he convinces them that his proposal is not subjective but based on knowledge of human nature. Man, according to Aristotle, possesses the ability of thinking, which represents, as he writes, the «correct combination of concepts.» From the standpoint of modern methodology, we could say that Aristotle does not discover thinking (before the works of Plato and Aristotle, thinking as defined by these philosophers did not yet exist), but forms it for the first time. By the way, judging by how slowly Aristotelian logic was assimilated, this took over a hundred years.

Reasoning and proof constituted the first «discursive practices» [18, pp. 83-85]. Here the term «discursive» is intended to express both the activity-based nature of thinking (to solve a problem or task, to obtain knowledge, a person must perform an activity) and its semiotic nature (the construction of knowledge and schemes [ibid.]). For example, in Plato's «Symposium», new knowledge about love («love is the search for one's other half and the striving for wholeness») is obtained through activity. To solve the problem that existed at the time (it was believed that the choice of a beloved was determined by the love-gods Aphrodite or Eros, but the emerging ancient Greek personality wanted to choose for itself), Aristophanes, one of the heroes of the «Symposium», on the one hand, creates the scheme of the androgyne, and on the other, conducts reasoning [16, p. 100]. At the same time, asserting that lovers resemble halves of androgynes («Thus, each of us is a half of a human being, cut into two flatfish-like parts, and therefore each always seeks the corresponding half» [ibid.]), Plato ascribes to the idea of lovers a new meaning – that lovers are characterized by the search for their other half. Simultaneously, the reader gets the opportunity to traverse a certain path in reasoning, as a result of which they obtain new knowledge about love. This syncretism of activity, the creation of new meaning, and the path traversed by thought constitutes discursivity. This mental activity is initiated and driven by a problem or task.

Subsequently, other forms of discursive practices arose. Their distinctive features were, on the one hand, orientation towards achieving truth within activity and semiotic constructions, and on the other, a focus on developing correct modes of activity that would serve the interests of many and the common good. Reflection here performed a dual function: it was both the route that thought charts and simultaneously the search for that route. In the Modern era, the interpretation of discursiveness expanded (beyond reasoning to include research, artistic creativity, engineering design, planning, etc.), and the search itself came to imply not only following correct ways of thinking but also methodological work. «The products and results of methodological work,» notes Shchedrovitsky in this regard, «are for the most part not knowledge testable for truth, but projects, design schemes, and prescriptions. And this is an inevitable conclusion once we abandon the overly narrow, purely cognitive orientation and accept K. Marx's thesis on the revolutionary-critical, transformative character of human activity» [26, p. 96].

II. Transmission of Thought to Man, Thinking as the Right Mind

For Aristotle, the ideal of thinking resided in heaven, in the divine mind: «Thus, from such a principle depend the heavens and <all> nature. And its life is such as ours, the best, which we have for a short time <...> Moreover, reason, by virtue of its participation in the object of thought, thinks itself <...> and contemplation is the most pleasant and best thing. If, therefore, God is always in that good state in which we are sometimes, this is wondrous; if in a better state, it is even more wondrous» [2, p. 211]. More indirectly, but within the same scheme of «"Creator's reason → human thought,» the initiation of thought was understood in the Middle Ages. But in the Renaissance and Modern times, God is deprived of the competence to directly control human behavior, being relegated, so to speak, to a parallel contemplative reality, in connection with which the source of thinking and creativity is transferred to man.

Great credit for this transition belongs to Nicholas of Cusa. While acknowledging that the mind is based on the image of God, Cusanus nevertheless transfers to the mind the competence to judge and direct human behavior and thinking. «The mind,» we read in his work, «is a living substance which, as we know from experience, speaks inwardly within us and judges, and which more than any other faculty of all the spiritual

faculties perceived in us, is likened to infinite substance and absolute form. Its duty in our body is the animation of the body; hence it is called the soul. Hence, the mind is a substantial form, or power, which concentrates in itself, in a manner corresponding to it, everything: both the animating power, by which the mind animates the body, endowing it with vegetative life and the capacity for sensation; and the rational power, as well as the intelligent and intellective power» [12, pp. 388-389, 400-401].

Formally, a scheme of thinking possessing a mechanism of self-government emerges: «thinking → mind → thinking.» But in reality, either a guiding residual role of the Creator is still acknowledged, or deterministic factors are sought, located both in the human psyche and outside the person, for example, in objects (Hume), or reflection (Locke), or experience (Kant). Descartes opens these searches, still acknowledging God's influence on human thinking but already pointing to the role of external objective conditions of thinking. He, in fact, formulates the first version of the second conception of thinking (it could be called «private»). «And indeed,» writes Descartes, «I find it astonishing that most people are so zealous in studying the properties of plants, the motion of stars, the transmutation of metals, and objects of similar sciences, but almost no one thinks of a good mind (*bona mens*) or this all-encompassing Wisdom, whereas all other pursuits are valuable not so much in themselves as because they render some service to it <...> By the word 'thinking' (*cogitatio*) I understand everything that occurs in us in such a way that we perceive it immediately by ourselves; and hence, not only understanding, willing, imagining, but also sensing mean here the same as thinking. <...> For whenever I so restrain my will within the bounds of my knowledge that it forms its judgments only about things presented to it by the reason clearly and distinctly, I cannot err; for every clear and distinct conception is undoubtedly something, and therefore cannot come from nothingness, but must necessarily have God as its creator, and God, being perfect, cannot be the cause of any error» [8, pp. 80-81, 344, 380].

III. The Third Conception of Thinking – «Methodological.» The Result of G.P. Shchedrovitsky's Research on Thinking

The methodological conception of thinking, apparently, took shape under the influence of a rethinking of the Kantian conception. From the latter, divine determination was eliminated, and the scheme of reason was adopted as an objective organon of categories, concepts, and knowledge, scientific and practical experience, philosophical awareness and reflection, and the system of European values and culture (see [20]). This rethinking was carried out in the late 1950s by Russian philosophers (in particular, A.A. Zinoviev, E.V. Ilyenkov, G.P. Shchedrovitsky) based on Marxist and semiotic ideas.

The group of philosophers led by Shchedrovitsky (which included the author) formulated in the early 1960s a program for studying thinking precisely as a historically developing, activity-based, and semiotic formation. Disciplinarily, the study of thinking was understood as the construction of a "contentful logic." But already in the mid-1960s and beyond, Shchedrovitsky reformulated the research program, viewing thinking as a type of activity (not individual activity, but in Marx's variant, defined in schemes of reproduction, development, cooperation, etc.). In this second program – "construction of a theory of activity" – the study of thinking was interpreted disciplinarily not as the construction of contentful logic, but as methodological work. Restoring, as he thought, historical justice, Shchedrovitsky asserted that philosophy and science were created by methodologists and therefore should be placed under their control.

«In reality,» writes Shchedrovitsky, «it turned out that at all the turning points characterizing the main stages in the formation of science – in Antiquity, in the late Middle Ages, and in the 17th-18th centuries – methodology took shape earlier, and science appeared and took shape within it, in essence, as a specific organization of certain parts of methodology.» But further, Shchedrovitsky then says, «a very strange thing always happened, at first glance: scientific thinking became fixed in its specific organizations and began to develop according to its own internal, immanent laws, while methodological thinking, which gave birth to science, on the contrary, did not become fixed in any specific organizations suitable for autonomous and immanent unfolding, and began to disintegrate» [23, p. 151].

In his lectures at the «Boards,» Shchedrovitsky said: «Methodology is a new form of organizing thinking and activity, standing above science and providing a 'common umbrella' for all other types of thinking and activity... the methodologist (unlike the scientist) is a person who works on his own activity and his own thinking, changing them, transforming them, creating new forms – first in thought, and then in implementation. In my opinion, this is the crux of the matter» [14, pp. 131, 184-185].

But let us see how Shchedrovitsky analyzed thinking and what he understood as a result. Initially, as already noted, he believed that thinking is a historically developing phenomenon. «Thinking,» writes Shchedrovitsky, «represents a historically developing, or, as Marx said, 'organic whole.' The new logic must, therefore, be contentful and genetic... The first task that **reconstruction** must solve is to genetically link various operations, presenting some as the development of others» [24, pp. 39, 44]. There is a subtle point here: historical analysis does not coincide with genetic **reconstruction**, which represents **exactly** a reconstruction based on hypotheses about the structure and development of the phenomenon under study. Shchedrovitsky never examined thinking historically, but only in terms of genesis.

The second basic assumption of that time was that thinking represents a semiotic process (the substitution of objects by signs and signs by other signs). Based on this hypothesis, an explanation of some properties of thinking was proposed, but overall, as I show, this move was also of little effect, since signs and actions with them are merely one of the conditions of thinking. Analyzing semiotic processes, one cannot understand the peculiarities and functioning of thinking. In fact, what was analyzed was not thinking, but a projection of the objective conditions determining thinking, "cut out" by the semiotic approach. [19, p. 56]

But what Shchedrovitsky truly succeeded in was the analysis of thinking as activity: operations, tasks, means and procedures for solving them, and the products of solving tasks were described as components of thinking. In the second stage (constructing the theory of activity), the connections of knowledge in cooperative structures and the action of reflection were analyzed.

In the third stage, Shchedrovitsky, believing that it is methodologists who carry out the reform of thinking, introduces the concept of «methodological thinking.» «It is asserted,» he writes, «that there exists a special, methodological thinking, which moves not only in pictures of objects and the processes occurring in them, but simultaneously in a second space – the space of the activity itself, correlating these spaces with each other and establishing special relations between them» [25, p. 58].

However, in this case, it is no longer a matter of researching thinking, but of its constitution, and only within the framework of the MMC methodology. Thus, overall (excluding the analysis of the activity plane), in my opinion, Shchedrovitsky failed to understand the structure and functioning of thinking as it historically and culturally developed.

IV. Approach to the Cognition of Thinking and Its Characteristics

So, it is one thing to study thinking as it developed in history and culture, and another to constitute it under the assumption that more perfect and modern forms of thought are being created. Further discussion will concern the former. First of all, let us define the approach and methodology of study. The author shares the understanding of thinking as a historical formation but believes that thinking changes discretely, in the form of the emergence, development, and completion of an individual culture, as well as the replacement of previous cultures by subsequent ones. Thus, archaic culture gave way to the culture of the Ancient Kingdoms, which gave way to Ancient culture, which was replaced by Medieval culture, which passed the historical baton to Modern culture (Modernity). It can be assumed that with the change of culture, the forms (structures and processes) of thinking also change: problems and tasks, ways of resolving them, understanding of reality, forms of awareness and conceptualization. But thinking in the previous culture conditions some features of thinking in the subsequent culture.

This is the initial hypothesis of thinking. The next hypothesis concerns the method of studying thinking. Firstly, this method presupposes knowledge of facts of changes in thinking; in this case, we are talking

about empirical material recording the emergence, development, completion, and replacement of cultures. Here we implement the methodological stance of the early 1960s that «logic is an empirical science.»

Secondly, the construction of reconstructions (of thinking and its changes) is carried out based on generalizations (hypotheses) that define the essence of thinking (they will be formulated below).

Thirdly, we assume that, starting from Ancient culture, thinking begins to be used as an instrument of cognition, philosophy, science, art, and later many other practices (engineering, art criticism, religious, esoteric, etc.). As a result, thinking adapts and specializes, leading to specific forms and structures of thinking (philosophical, scientific, technical, esoteric, etc.). Hence an important consequence: the study of thinking is an aspect (plane) of the research of the corresponding practices. For example, by studying science from the perspective of hypotheses about the essence of thinking, we gain knowledge of scientific thinking; by studying art from the same perspective, we gain knowledge of artistic thinking; by researching esotericism, we describe esoteric thinking. This is precisely how the author acted, studying philosophy, different types of sciences, technology, art, and esotericism. In other words, I focused in such research precisely on the forms and structures of the corresponding type of thinking.

Now, hypotheses about the essence of thinking. To make the author's propositions more understandable, I will illustrate my positions by studying the thinking of Galileo Galilei in his work «Discourses and Mathematical Demonstrations Concerning Two New Sciences Pertaining to Mechanics and Local Motion» [4].

The first characteristic of the essence of thinking is as follows. Thinking, as we said, represents a type of discursive practice (individual activity, semiotics, the path of thought). Therefore, the first necessary step is to correctly choose the discursive practice and accordingly describe (analyze) it. In this case, the author chose the aforementioned work of Galileo, as it represented a vivid example of a new discursive practice. Let us compare it with Plato's work in the «Symposium». In Plato, there are only three discursive steps in the study of love: constructing the scheme of the androgyne, formulating a definition based on it («love is the search for one's other half and the striving for wholeness»), and parallel to these two actions, a critique of the traditional understanding of love as the action of the love-gods Aphrodite and Eros.

Galileo's thinking is more complex, although it also begins with the construction of a scheme (in this case, free fall). Galileo borrows this scheme from the medieval logician and scholar Nicole Oresme. It is a right triangle, one leg of which (PO) represents the time of the body's fall, and the heights inside the triangle, perpendicular to this leg, represent the velocities of fall. Fig. 1

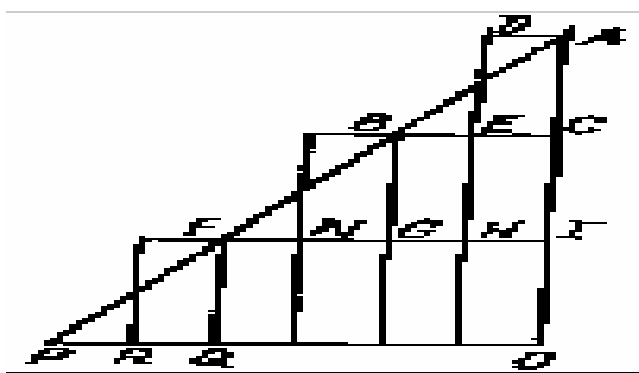


Fig. 1 (scheme from Galileo's Discourses)

Analyzing this scheme, Galileo formulates three hypotheses: the velocity of a falling body increases uniformly (he bases all further proofs on this proposition); all bodies must fall with the same speed regardless of their weight (the scheme has only two parameters – time and velocities, no weight); the weight of the body is spent not on maintaining motion, but only on its increment (otherwise, the body's fall could not be depicted

using a triangle). [19, pp. 192-194] Then Galileo geometrically proves the following proposition: «If a body, starting from rest, falls with uniformly accelerated motion, then the distances traversed by it in certain intervals of time are to each other as the squares of the times» (this was the sought-after law of free fall).

However, Galileo's opponents did not accept either his hypotheses or his proof. Therefore, Galileo clarifies the initial positions, pointing out, on the one hand, the role of friction when a body falls in air, and on the other hand, adding another scheme to Oresme's scheme (depicting weight and the interaction of the body with the medium). Using these two schemes, Galileo polemicizes with his opponents and proves that Oresme's scheme can be preserved by adopting another hypothesis, namely: «the cause of the different speeds of bodies of different weights does not lie in their weight itself, but is due to external causes – mainly the resistance of the medium, so that if the latter were removed, all bodies would fall with the same speed» [5, p. 160].

Galileo's opponents continued to object, and to finally convince them, Galileo devises an experiment, showing that indeed, if air resistance is reduced to a minimum, all bodies will fall with the same speed, i.e., regardless of weight. In turn, carrying out the experiment required several more steps of thought. [19, pp. 196-197]

Thus, if Plato's discourse consisted of three steps (thoughts and actions), Galileo's consisted of many (constructing schemes, formulating hypotheses and propositions, proofs, polemics with opponents, correcting hypotheses and propositions, constructing an experiment, which itself included several steps).

Furthermore, Galileo strives to think correctly, including justifications for his constructions for the readers. These points relate to the following third characteristic of thinking. Thinking is two-layered, consisting of the thinking discourse and a kind of management of it through models of thinking, rules of logic, and methodological propositions. Specifically, Galileo established the correctness of his actions by pointing to the role of mathematics, as well as the distinction between experiential knowledge and theoretical propositions (mathematical schemes that have passed experimental verification can already be considered models of natural processes [19, pp. 194-199]).

«But if human understanding,» writes Galileo, «is considered intensively, and if by intensity is meant the perfect understanding of certain propositions, then I say that the human intellect does understand some of these propositions perfectly, and in them it acquires the same degree of certainty as Nature herself possesses. Among these propositions belong only the mathematical sciences, namely geometry and arithmetic, in which the divine intellect indeed knows an infinite number of propositions, because it knows all. And as regards the little that the human intellect truly understands, I believe that this knowledge equals the divine in its objective certainty, for here man succeeds in understanding the necessity, above which no higher certainty can exist» [5, p. 61].

«Therefore, when we wish to test in practice, in a finite space, those conclusions which have been drawn on the assumption of infinite space, it is necessary to exclude from what will be found in reality whatever may be attributable not to the infinite distance of our center, even though the latter may be huge compared with the small size of the instruments we use... for the scientific treatment of this subject, it is necessary first to make abstract conclusions, and having made them, to test them within the limits permitted by experience. The benefit from this will be considerable. The material and the form can be chosen so that the resistance of the medium is as small as possible» [4, p. 431].

The fourth characteristic of thinking represents, on the one hand, a reflection on the factors and conditions that influenced thinking, and on the other, an analysis of the consequences and results of the implemented thinking. In the case of the «Discourses», this includes the influence on Galileo of Aristotle's works (although simultaneously he polemicizes with and denies a number of Aristotelian propositions about motion), and the influence of Nicole Oresme (Galileo took from him not only the initial scheme but also, as V. Zubov and A. Grigoryan show, used Oresme's «Tractatus de configurationibus qualitatum» in the «Discourses», from which he took terminology and a number of concepts) [18, p. 158]. As a man of the new Renaissance culture, Galileo believed that not only God but also man creates. This consideration allowed Galileo to invent the experiment (in which a new nature was created, wrought).

As is known, Galileo's works had a tremendous influence not only on Modern science (they were regarded as models of new, scientific thinking) but also on the engineering developing at that time. For example, **Christian** Huygens, in his treatise «Three Memoirs on Mechanics», considered the first example of engineering activity, relies entirely on Galileo's research. [7] Galileo's works had no less influence on astronomy.

A separate topic, which due to its volume we will not consider in this work, is the transformation of Modern thinking under the influence of AI developments. The author, in several articles (the two most recent [21; 22]), analyzes this transformation, showing, on the one hand, how neural networks are structured and operate, on the other, the important role in the creation of this amazing technology of methods for modeling schemes, language, thinking, and problem-solving, and on a third hand, the current emergence of hybrid artificial-natural intelligence (ANI).

Finally, one can point to the fifth characteristic of thinking – conceptions of thinking. The first, Aristotelian, and the second, belonging to Descartes, were indicated above. We called the third conception of thinking methodological (Kant, Shchedrovitsky), but in fact, starting from the 20th century, several other conceptions of thinking were created, for example, that of J. Dewey. «Thinking,» he wrote, «always concerns things that are unclear, uncertain, incomplete. Therefore, thinking is inquiry» [9]. Dewey's introduction of the concept of the «act of thought,» which distinguishes: «(I) a feeling of difficulty, (II) its definition and delimitation, (III) the suggestion of a possible solution, (IV) development by reasoning of the relations of the suggestion, (V) further observations leading to acceptance or rejection,» also belongs to the psychological interpretation of thinking [18, p. 38].

Conceptions of thinking, as the author shows, performed two main functions. Firstly, they represented a reflection of professional activity (in these examples, in philosophy and science). Secondly, they facilitated the transmission of new forms of thinking in culture, creating the necessary understanding among specialists. [18, pp. 235, 240] Furthermore, the implementation of different conceptions of thinking led to a multiplicity of forms of thinking. This multiplicity, as a rule, was not recognized; it seemed that European thinking was the only one. In this regard, the limitations of the European paradigm of thinking became apparent in the 20th century in dialogue with other non-European systems of thought.

I believe that the five characteristics of thinking indicated here represent generalizations obtained by the author in the course of analyzing specific types of thinking in science, philosophy, art, technology, and education. But since many other specific types of thinking remain to be studied, both in the same areas and in others (it is impossible for one researcher to «embrace the unembraceable»), the author is prepared to correct and even recreate the generalizations of thinking. Alexander Pavlovich Ogurtsov said that one should not rush to generalize general concepts, but since one has to use them in the course of research, it is more correct, in my opinion, to periodically rethink and, if necessary, revise generalizations. Let us now return to the problems at the beginning of the article.

Why has interest in correct thinking declined? Because our civilization is passing through a stage of deep crisis. In such a period, the very criteria of correctness cease to function. Against the backdrop of talk about chaos, complexity, and uncertainty of reality, it is very difficult to establish an understanding of correctness and erroneousness in discursive practices. But it is still necessary; hence, in the author's conviction, the growing importance of philosophy and methodology.

Does reason continue to guide thinking in our time? It does not seem so. That reason, behind which God was perceived, has long ceased to exist. Humanity, if it wants to avoid the end of the world and establish a meaningful life on Earth, will still be forced to act reasonably, simultaneously re-establishing and collectively understanding what «reasonable» and reason mean. It is not excluded that these transformations will begin only after humanity goes through a series of serious catastrophes.

Arendt's question: can thinking contribute to the proper development of consciousness, including moral consciousness? I think it can, and here are my arguments. The fact is that thinking from the very beginning was loaded with value and ontological significance. Parmenides refused to live in the contradictory and subjective world of Protagoras. He believed that the gods created a consistent and good world. Plato also emphasized the Good as the highest value foundation of being, although he connected the Good with faith in ideas, access to

which only Plato himself had. The good and nature of Aristotle were closely linked to reason and the divine, and the Stagirite in his «Metaphysics» urged people to live according to the highest. «Reason in Kant,» explains P. Gaidenko, «demands wholeness, completeness, closure upon itself... But besides the aforementioned requirement, reason is defined by Kant, if one may say so, substantively, and this substantive definition consists in the fact that the principle or idea of reason is identical with the idea of the good» [6, pp. 95-96]. I think this is sufficient and clear: a certain type of thinking induces certain values and even, partly, a certain reality. Another matter is that at present, due to the multiplicity of types of thinking, it has become very difficult, almost impossible, for an ordinary person, also subject to propaganda, to orient themselves in these values and realities. Here again is a task for philosophy, social sciences, and the humanities.

V. Conclusion

The analysis conducted in the article allows for several conclusions of both theoretical and practical-worldview significance. Thinking is not a natural ability but represents a historically variable discursive practice that takes shape within specific cultures and changes as they are replaced. Hence the conclusion that the study of thinking requires not psychological or neurophysiological reductions but presupposes a cultural-historical reconstruction.

The three classical conceptualizations – the ancient, the modern European, and the methodological – capture different stages in the formation of thinking, but none can claim universality. The author is particularly critical of G.P. Shchedrovitsky's attempt to present methodology as the highest form of thinking; in his view, Shchedrovitsky confuses the study and constitution of thinking, substituting normative design for analysis.

The five-component model of thinking proposed by the author (discursive practice, managing methodological layer, factors and conditions, consequences, conceptions) provides a tool for comparative study of different types of thinking – scientific, philosophical, artistic, and engineering. Its heuristic value is confirmed by the example of analyzing Galileo's thinking, where it is possible to show how external cultural influences, polemics, experiment, and reflection intertwine in a single thought process.

Answering the questions posed at the beginning of the article, the author states that the decline in interest in thinking is not accidental: modern civilization is experiencing a systemic crisis in which the former criteria of correctness and rationality cease to function. Kantian reason as a regulative idea has lost its guiding force, and humanity will probably be forced to re-establish, collectively and through overcoming catastrophes, new norms of rational thinking.

Regarding Hannah Arendt's question, the author gives a cautiously optimistic answer: thinking can indeed contribute to the moral development of consciousness, since from its very inception it was ontologically and value-laden (Parmenides, Plato, Aristotle, Kant). However, in conditions of pluralism of discourses and manipulative practices, this connection becomes less obvious and requires special philosophical and methodological work to restore orientation.

Ultimately, the article is not just a historical-philosophical survey but a kind of programmatic statement about the need to revive attention to thinking as the central human ability, without which neither science, nor morality, nor the survival of humanity in conditions of growing uncertainty is possible. The author calls not for a return to old authorities, but for a new collective establishment of the meaning of «reasonable» and «correct» – a task that is today one of the main ones for philosophy and the humanities.

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