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**ATOMISM OF DEMOCRITUS THROUGH POSSIBLE MODERN  
SOCIAL AND PHILOSOPHICAL INTERPRETATIONS**

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**Abstract**

The subject of research is the atomic doctrine of Democritus. Scientific novelty lies in the refraction of this teaching through the prism of the methodological possibilities that modern social philosophy has. The work also actualizes the idea of concept, which was developed in medieval philosophy. Basic method: the author's own experience of abductions constitutes the initial prerequisite for interpreting texts of the Greek philosopher and his commentators. The main conclusion is that the philosophical discourse of Democritus is a connecting link between the “logical reasoning” inherent in everyday thinking and the “logic of meanings”, which is the product of higher philosophical contemplations. This allows the philosopher to combine the skill of verbal construction with the art of true existence. In conclusion, author present the judgments of R. Descartes and Ch. Peirce. The author concludes, that the discovery of a certain equilibrium component can really be equated with the complex art that our hero possessed.

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## 1. Introduction

“The significance of the atomic doctrine for science can hardly be overestimated”, writes Gaidenko. “This was the first theoretical program in the history of thought that consistently and thoughtfully put forward a methodological principle that required explaining the whole as the sum of its individual parts - individuals ... Explaining the structure of the whole, proceeding from the form, order and position of the individuals constituting it - such a program formed the basis of a number of not only physical theories of antiquity and modern times, but also many psychological and sociological doctrines. Atomists developed a method that could be applied, and has been applied repeatedly, to all possible areas of both natural and human existence. “It is difficult to disagree with all this. However, here is what Gaidenko says further: “This method can be called mechanistic: the mechanical connection of individuals should explain the essence of natural processes”.

Something opposite is stated by Lewis: “... it is clear how groundless are the remarks that it would be in vain to look in the teachings of Democritus for views deeper than those that are characteristic of all adherents of the physical and mechanical point of view ... that Democritus supposedly came to his atomistic theory based on a mechanistic view of nature ... “. Criticizing such a simplified view as applied to society, Kemerov writes that today the usual analogies and metaphors that define the human individual as just a separate element or atom of sociality, a point of social space, turn out to be unproductive. “The work of our time,” he continues, “concentrates on transforming the social inertia of structures focused on the extensive processing of matter and energy, respectively, on the creation, reproduction and renewal of systems that make the most of the qualitative potential of human activity”.

Such work, according to Kemerov, “presupposes the subjective realization of social forms, in which people are not raw materials, but nuclear forces that reproduce systems and their configurations”. With this view, society “is a poly-subject formation, the organization of which is carried out along different lines and paths of human activity, in various forms of transfer, combination and growth of living and objectified human forces”. Individuals, being in the role of ‘nodes’ of social ties, have the opportunity to discover multidimensionality of the social process in their behavior, thereby “opening up” the polyphonic complexity of sociality, which allows joint efforts to achieve effects that are not achievable with a simple addition of their forces. However, individuals may not take advantage of this opportunity: “the soul is a bed of fate, the lot of which is to put down roots of happiness or unhappiness,” - this is the central idea of Democritus' ethics (Akhmetov et al., 2017a; Akhmetov et al., 2017b; Deleuze, 2015; Goryunova et al., 2017; Lurie, 1970; Mukhametshin et al., 2017; Mukhametshin & Kadyrov, 2017; Mukhtasarova & Gareev, 2014).

## 2. Problem Statement

“The atomic doctrine of Democritus has not yet received a proper assessment, and yet it is one of the deepest doctrines that have ever been developed by the human mind”, wrote Lewis more than a hundred years ago. A contemporary of Lewis Trubetskoy notes: “Already Galileo ... is imbued with the ideas of Democritus, Bacon opposes him to Aristotle and inclines to his hypothesis, which is shared by

Hobbes. Descartes is under the influence of Democritus, and his contemporary Gassendi was a resolute follower of atomism”.

One of the most famous Soviet researchers of the work of Democritus Lurie wrote: “Only in the field of mathematics and astronomy the science of Aristotle is higher than the science of Democritus - and that is not because of any personal merits of Aristotle, but because in the interval between Democritus and Aristotle these sciences, represented by Theetetus, Eudoxus and others, made several steps forward, although sacrificing for this some valuable successes achieved in the 5th century, and especially in the teachings of Democritus. In other fields of science, first in physics and mechanics ... the most remarkable of Aristotle's followers, Straton, who wished to move on ..., was forced in all respects to return to the point of view of Democritus”. Trubetskoy notes that the atomic hypothesis has been of particular importance in physics since the time of Newton, and Dalton introduced this hypothesis into chemistry, where it still dominates and where the greatest discoveries are associated with it (Lurie, 1970; Mukhtasarova & Fatkullin, 2015; Mukhtasarova, 2014; Mukhtasarova & Fatkullin, 2014; Mukhtasarova & Safin, 2018; Sergeev et al., 2017; Shaidullina, 2017).

Leibniz, says Lewis, only many centuries later created a doctrine essentially like the one by Democritus; his famous “Monadology” is nothing more than the atomism of Democritus, expressed only in new terms. Leibniz called his monad force, which played the role of primary matter for him. Like Leibniz, Democritus believed that atoms themselves are weightless and possess only strength, while weight is the result of a push from a higher force. It is interesting to note, Lewis continues, that both thinkers agree not only on the doctrine of atoms, but also on the doctrine of the origin of knowledge, a coincidence that suggests that the teachings of both philosophers are related. In general, as Mamardashvili notes, in the history of philosophy there are strange cycles, something like a game of correspondences. We want to draw attention to another correspondence in the teachings of Leibniz and Democritus, which, as it seems to us, is becoming especially relevant now (Tyncherov et al., 2017; Trubetskoy, 1997; Zeigman et al., 2016; Zeigman et al., 2017).

### **3. Research Questions**

The philosophical expertise as a kind of mental act begins to be clarified through the invention of a special language, according to Mamardashvili. This is the language of Genesis, in which something is not just asserted, but assertions presuppose some philosophical grammar, only knowing which this language can be understood. We are accustomed to the fact that every human language is objective, i.e. every word assumes that it has a referent in the form of an object that exists in the world and is designated by this word. But in philosophy, it is different. For example, Parmenides' assertion that Being and thinking are identical must be understood in a very special sense. The usual understanding states that there are objects outside of us, outside of our mind and there is a thought about an object, i.e. images and ideas about the subject in our mind. However, in this case, Being is not an object that is outside of us and we cannot point a finger at it (Yusupov, 2018; Yusupov, 2020).

According to Mamardashvili, philosophy, using the usual resources of language, from the very beginning tried to express something different. But how can it be done? One way is to do it like Parmenides did using static terms; it can be stated that Being is something fixed, unchanging and

indivisible. Or it can be possible, this path was taken by Heraclitus, to focus on the dynamics and try to understand how Being manifests itself in the existing matter. Mamardashvili draws our attention to the fact that, although Heraclitus has certain philosophical statements, he does not have a certain philosophical doctrine. What has come down to us from Heraclitus is the result of a completely different work. He did not create a system; rather, he can be considered an experimenter on the possibilities of linguistic means of expressing something which is inexpressible in the usual way. This fact leads to the difficulties in understanding his texts. He was a philosopher for philosophers.

Heraclitus sets in motion and collides words, semantic and syntactic links, through which we can talk about Being. Thus, there is a paradox in his judgments. In the gap between the clashing phrases, he tried to reveal the space of meaning and create the possibility of understanding. The philosopher believed that what he was talking about could not be understood directly and stated in the form of a theory. One can only create conditions for the meaning to appear in the interlocutor's head as the product of the paradoxical movement of thought in the speeches of Heraclitus. Here Mamardashvili draws attention to another idea that persistently resounds in the teachings of the ancient Greeks: in fact, everything is this-sided, everything is here, everything is revealed, and everything is open. Therefore, everything is Being, or, as Parmenides argued, there is only Being. Feelings by themselves do not deceive us, and the problem is how to truly reflect this Being in our consciousness.

#### **4. Purpose of the Study**

At the level of ordinary thinking, Being can only be represented as something surrounded by emptiness. But this is a wrong image, because there is nothing but Being. Therefore, commentators, as Mamardashvili states, are often confused by the fact that Parmenides first expounds the truth, i.e. what Being really is, and in the second part of his famous poem he describes something that people can only imagine. However, it seems to us that this difficulty can be resolved by making the assumption: Parmenides, like Heraclitus, tries to create a space of meaning as a necessary prerequisite for the possibility of understanding, but collides (although now it is more correct to say divorces) two images of Being - the correct one, formed in consciousness philosopher, and the unfaithful one, which is represented in ordinary thinking. Having accepted this assumption, one can understand the meaning of the transposition that Democritus makes in the doctrine of Genesis.

#### **5. Research Methods**

Democritus makes the starting point of his reasoning not Being, as it is, but how this Being is presented or manifests itself in the existing, and above all in the life of people. In this respect, it is significant that the flowering of the philosopher's creativity falls on the end of the 5th century BC, i.e. just coincides with the time marked not only by the theoretical search for the ideal norm, but also by the practical implementation of this norm in architecture, art, literature, and most importantly - in public life. In his famous speech, transmitted by the historian Thucydides, Pericles singles out activity based on thinking, on knowledge as the most important feature of the Athenians. And when Pericles, being an outstanding statesman himself, says that the Athenian institutions are not like any others, and that their

basis is a reasonable discussion, he expresses that shift in the consciousness of his contemporaries, a significant contribution to which was made by Democritus.

It turns out that it is possible to realize the full value of what Democritus did only through the prism of later teachings. What do we mean? On the one hand, the language of Democritus teaching is devoid of that paradox that was characteristic of Heraclitus. Democritus' speech unfolds in a linear sequence of judgment and does not contradict the concepts created based on the rules of reason and the systematic nature of knowledge. In this capacity, his thought turns out to be devoid of that touch of elitism that was inherent in Heraclitus and becomes quite accessible for perception not only by the mind of philosophers, but also by the consciousness of ordinary people. But on the other hand, Democritus is not engaged in reducing the doctrine of Being to the level of simple concepts. Otherwise, as we have already said, the picture of Genesis would inevitably turn out to be false. In our opinion, the discussion here should be about the building of so-called concepts by the philosopher.

A concept (from the Latin “conceptus”, i.e., collection, perception, conception) is the act of “grasping” the meanings of something in the unity of a speech utterance. The principle of such “grasping”, Neretina discovers already in early Patristics, although the term itself was introduced into philosophy by Abelard. The idea of the concept is closely related to the ideas of creation and embodiment of the Word. The concept, writes Neretina, in contrast to “grasping” in the concept by the mind, is a derivative of the sublime spirit, capable of collecting meanings as something universal, representing a connection between things and speech, and include reason as its part. If the rational concept is non-personal, it is associated with the sign and significant structures of the language, which performs the functions of forming a certain thought, regardless of communication, then the concept is formed by speech, which is carried out not in the sphere of grammar (grammar is included in it as a part), but in the space of the soul with its rhythms and energy.

In most philosophical dictionaries and encyclopedias, Neretina writes, the concept is identified with the concept. However, they are not the same thing and they should be clearly distinguished from each other. A concept is the meaning of a statement. Deleuze points to Leibniz's amazing ability to convey the meanings of rather complex things to his addressees. “Leibniz was truly a teaching genius”, he says. “He managed to explain to those who dealt only with elementary algebra what differential calculus is”. The secret of this ability of Leibniz is that “he does not presuppose (i.e. does not presuppose – inserted by R.Y.) any concept of differential calculus”.

“Whenever I talk about a principle, according to Leibniz”, Deleuze continues, “I'm going to give him two formulations. One of them is common people, the other is a scientist. This is an excellent tool at the level of principles: the necessary relationship between pre-philosophy and philosophy, this is the relationship of exteriority (i.e. transition to the external, inserted by - R.Y.), where philosophy has a need for pre-philosophy”. Benevich discusses the same topic: “Remaining a sovereign kind of activity, philosophy, nevertheless, always presupposes the presence of a listener, an interlocutor, the Other. Along with speech or language, the very environment of pronunciation, which became the object of Heidegger's close attention, the “other” is placed at the center of modern philosophy. If Being, according to Heidegger, is really the master of that house, which is called language, then is it not constituted by itself and everything connected with it, only in relation to the Other...? ”.

“The relationship between the “parts” of a separate Being is a face-to-face relationship,” writes E. Levinas. Such an attitude “is addressed to the Other, to the reader who appears behind my words ... Philosophy in its liturgical meaning appeals to the Other, to whom everyone, be it a teacher or a student, turns”. Further the scholar continues: “We speak of the exteriority of Being not as a form that Being - accidentally or temporarily - acquires during its dispersion or decline, but as His very existence. Such exteriority is found in the Other”. In the medieval interpretation of the concept, the appeal to the “other” presupposed a simultaneous appeal to the transcendental source of the word - God. This is also indicated by Levinas, saying that genuine “discourse is discourse with God, and not with equals, according to the distinction established by Plato in the Phaedrus. Metaphysics is the essence of this speech, addressed to God, it leads beyond existence”.

## 6. Findings

Pliny the Elder calls Democritus the first who comprehended and was able to display the connection between heaven and earth. Although it is quite possible that Pliny himself means here something quite this worldly, namely the prediction of a failure of the olive harvest based on the rise of the Pleiades. Something similar Aristotle reports about Thales: “It is said that when Thales, because of his poverty, was reproached for the uselessness of philosophy, he, having realized from observing the stars about the future [rich] harvest of olives, even in winter - fortunately he had a little money - distributed them as a deposit for all the oil-presses in Miletus and Chios. He hired them for a song, since no one gave more, and when the time came and the demand for them suddenly increased, he began to lease them at his own discretion and, having collected a lot of money, showed that philosophers can easily get rich if they want, but that is not what they care about”.

According to Pliny, Democritus in this story also had the goal of proving that if he wants, he can easily get rich. However, there is one significant difference in these two descriptions, and it does not concern the fact that one, foreseeing a large harvest of olives, bought up all the oil mills in the district, but the other, on the contrary, somehow having learned about the upcoming harvest failure, bought their oil very cheaply from rich owners, which is not important here. It is important that Aristotle, and then his follower Jerome of Rhodes, tell us only that Thales collected enormous money during the season, while Pliny says that Democritus, having quickly become rich, returned their losses to the embittered and greedy owners. It seems to us that the reason for this act on the part of Democritus was not only his conviction that “envy gives rise to the beginning of enmity.” “Beware of slander, even if they are false”, says Democritus, “after all, the crowd does not know the truth, but only counts with the generally accepted opinion”.

This last thought, conveyed by the Christian author Anthony Melissa, indicates that Democritus himself was inclined to reckon with the opinion of the crowd, and therefore to the absence on his part of an arrogant attitude towards ordinary people, not philosophers. This attitude is quite correlated with the instructions of one of the most influential Teachers of the Church, the Apostle Paul, regarding the eating of animals sacrificed to idols. We know, he says, that the idol in the world is nothing, and that there is no other God but the One, therefore food cannot bring us closer to God, but cannot distance us from Him, even if this food was sacrificed to “the gods”. This knowledge makes us free. Beware, however,

continues the apostle, lest this freedom of yours be a temptation for the weak. However, not everyone has such knowledge. “Therefore, if food tempts my brother, I will not eat meat forever, lest I tempt my brother”.

In contrast, for example, from Heraclitus, Democritus demonstrates the line of thinking expressed today by Ionin: “The current separation of social sciences from social practice can be considered, on the one hand, as a product of the ideology of earlier times, when the “advanced theory ” held the position of infallible teaching in relation to everyday life, which does not deserve serious attention of scientists, and on the other, as a result of insufficient reflection of scientists in relation to the foundations of their own scientific activity, the roots of which are in everyday life. “The study of these foundations”, continues Ionin, “is a truly gratifying task, the solution of which would help to understand a lot not only in the nature of the current state of the sciences of society and culture, but also regarding the prospects for their development”. According to Kemerova, the opportunity thus emerging to measure the standards of habitual experience and everyday ideas with the active assimilation of life by people, makes it possible to restore the logic of common sense, and with it the reliable structures of practice.

## 7. Conclusion

In conclusion, we would like to present, at first glance, the opposite judgments of two great representatives of philosophy. On the one hand, this is Descartes, who writes that in itself “deduction ... or the pure conclusion of one from the other ... can never be incorrectly produced by reason, even an extremely unreasonable one,” and “all knowledge ... can be derived from one of the other with the help of so necessary inferences that this does not require special skill and sensitivity”. On the other hand, Charles Peirce, who claims that “everyone considers himself sufficiently well versed in the art of reasoning”, but the ability to draw conclusions “is not a natural gift, but a long and complex art”. It must be assumed that this contradiction is imaginary, and the point here is that the first implies the logic of rational concepts, which is quite within the power of ordinary thinking, and the second - the logic of meanings, based on that special Reality that only for a moment reveals itself to the contemplating mind of philosophers. The discovery of a certain equilibrium component here can really be equated with the complex art that our hero possessed.

Democritus, as Reale and Antiseri write, is known for his brilliant moral maxims, which, however, stem not so much from his ontological principles as from Greek wisdom in general. We believe that it is possible to trace a closer connection between the ethics of Democritus and his ontology, which allows us to present in a new light the Democritus doctrine of society. Although the ontology of Democritus is most often depicted in images of physical reality, in the perception of ordinary contemporaries, these images could evoke living associations primarily when individuals, or in Greek atoms, were perceived as citizens of the polis. “In this regard, the idea of the concept again becomes relevant, because the concept, firstly, is extremely subjective. Secondly, when it is formed, it presupposes another subject.

The truth is not all truth the human mind is able to express in words. If Heraclitus, according to Seneca's remark: “every time he went out to people and saw around him so many people living badly, or rather badly dying people, cried and pitied everyone”, then Democritus, looking at how people spend their whole lives on useless, fussing and all the time trying to get what they really do not need, could not

help laughing. But behind the mask of the merry fellow “the wisest among the Hellenes” was hidden, who not only comprehended (here the words of Pliny the Elder acquire a special, symbolic sound) but was also able to reflect in his life and in his teaching the connection between Heaven and earth, between Being and real existence ... In his wisdom, Democritus laid the foundation for the true affirmation of that Reality, which itself is the beginning and affirmation of all that is genuine and present.

## References

- Akhmetov, R. T., Andreev, A. V., & Mukhametshin, V. V. (2017a). Residual oil saturation and the displacement factor prediction methodology based on geophysical studies data to evaluate efficiency of nanotechnologies application. *Nanotechnologies in Construction*, 9(5), 116–133.
- Akhmetov, R. T., Mukhametshin, V. V., Andreev, A. V., & Sultanov, S. K. (2017b). Some Testing Results of Productive Strata Wettability Index Forecasting Technique. *SOCAR Proceedings*, 4, 83–87. <https://doi.org/10.5510/OGP20170400334>
- Deleuze, J. (2015). *Lectures on Leibniz*. Moscow, Ad Marginem Press.
- Goryunova, M. V., Kuleshova, L. S., & Khakimova, A. I. (2017). Application of signal analysis for diagnostics. *2017 International Conference on Industrial Engineering, Applications and Manufacturing (ICIEAM) (Saint Petersburg, 16-19 May 2017)*. pp. 1795–1799. <https://doi.org/10.1109/ICIEAM.2017.8076487>
- Lurie, S. Y. (1970). *Democritus. Texts. Translation. Research*. Leningrad, Science.
- Mukhametshin, V. S., Zeigman, Y. V., & Andreev A. V. (2017). Rapid assessment of deposit production capacity for determination of nanotechnologies application efficiency and necessity to stimulate their development. *Nanotechnologies in Construction*, 9(3), 20–34. <https://doi.org/10.15828/2075-8545-2017-9-3-20-34>
- Mukhametshin, V. V., & Kadyrov, R. R. (2017). Influence of nanoadditives on mechanical and isolating properties of cement-based compositions. *Nanotechnologies in Construction*, 9(6), 18–36. <https://doi.org/10.15828/2075-8545-2017-9-6-18-36>
- Mukhtasarova, E. A. (2014). Crisis of spiritual values of Russian society and new value orientations of modern youth. *Actual issues of engineering education: competence model of the graduate-2014: collection of scientific papers*. Ufa, Arkaim. pp. 76-80.
- Mukhtasarova, E. A., & Gareev, Z. A. (2014). The Relevance of the ethno-national aspect in the education of modern youth. *Actual issues of engineering education: competence model of the graduate-2014: collection of scientific papers*, Ufa, Arkaim, pp. 22-27.
- Mukhtasarova, E. A., & Fatkullin, I. F. (2015). History of the national question in tsarist Russia. *Materials of the all-Russian 42nd scientific and technical conference of young scientists, postgraduates and students*. Ufa: USPTU, 2, 266-271.
- Mukhtasarova, E. A., & Fatkullin, I. F. (2014). The national question in Russia: the experience of the black Hundreds. *Materials of the all-Russian 41st scientific and technical conference of young scientists, postgraduates and students*. Ufa, Arkaim, 2, 175-178.
- Mukhtasarova, E. A., & Safin F. G. (2018). State of modern Russian youth tolerance. *European Proceedings of Social and Behavioural Sciences (RPTSS 2018 - International conference on research paradigms transformation in social sciences)*, 50, 206-213. <https://doi.org/10.15405/epsbs.2018.12.26>
- Sergeev, V. V., Belenkova, N. G., Zeigman, Y. V., & Mukhametshin, V. S. (2017). Physical properties of emulsion systems with SiO<sub>2</sub> nanoparticles. *Nanotechnologies in Construction*, 9(6), 37–64. <https://doi.org/10.15828/2075-8545-2017-9-6-37-64>
- Shaidullina, R. M., Amirov, A. F., Muhametshin, V. S., & Tyncherov, K. T. (2017). Designing Economic Socialization System in the Educational Process of Technological University. *European Journal of Contemporary Education*, 6(1), pp. 149–158. <https://doi.org/10.13187/ejced.2017.1.149>
- Trubetskoy, S. N. (1997). *Course of history of ancient philosophy*. Moscow, Humanit.

- Tyncherov, K. T., Mukhametshin, V. S., & Khuzina, L. B. (2017). Method to control and correct telemetry well information in the basis of residue number system. *Journal of Fundamental and Applied Sciences*, 9(2S), 1370–1374. <https://doi.org/10.4314/jfas.v9i2s.848>
- Yusupov, R. N. (2018). Resource of Russian religious and philosophical tradition in constructive relationship with west. *European Proceedings of Social and Behavioral Sciences (RPTSS 2018 - International conference on research paradigms transformation in social sciences)*, 50, 1402-1408. <https://doi.org/10.15405/epsbs.2018.12.171>
- Yusupov, R. N. (2020). *Introduction to philosophy*. Ufa, USPTU.
- Zeigman, Y. V., Mukhametshin, V. S., Khafizov, A. R., & Kharina, S. B. (2016). Prospects of Application of Multi-Functional Well Killing Fluids in Carbonate Reservoirs. *SOCAR Proceedings*, 3, 33–39. <https://doi.org/10.5510/OGP20160300286>
- Zeigman, Y. V., Mukhametshin, V. S., Sergeev, V. V., & Kinzyabaev, F. S. (2017). Experimental study of viscosity properties of emulsion system with SiO<sub>2</sub> nanoparticles. *Nanotehnologies in Construction*, 9(2), 16–38. <https://doi.org/10.15828/2075-8545-2017-9-2-16-38>