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SYNERGETICS AS A POSITIVISTIC ñTRICKò FOR PHILOSOPHY

For thousands of years, human beings have either tried to cognize larger-scale events considering their own current and practical activities or, considering the meaning of life and the highest power as well as the being who created the universe, they have sought the solution to all other problems in the divine power and in worshiping him.

In fact, this is the starting point of science and religion. Both of them have chosen from the actual life of the human being and once again have been relatively-independently structuralized and developed for applying to the same actual life.

Correspondingly, philosophical thinking has also two different sources- *two starting points*. The first of them is the philosophy which has its roots in the practical activity of the human being as well as in rational thought and generally in rational life; it is the very way that goes from naive realism to the idea of God and religious philosophy. And the second is the philosophy which has arisen from astonishment, intuition and the sense of holiness; this is the way that begins from the idea of God and religious philosophy and moves towards the philosophy of actual life.

These two ways, which come face to face with each other, of course, intersect somewhere here. Simultaneously, there have been attempts at thinking in both directions and trying to unite the two different types of thinking and worldview.

For materialist philosophy, sensualism and the rationalist teachings, which confirm that the cognitive process starts from sensory experience, the direction of the cognitive way is from the specific towards the general and from real material to scientific-theoretical theses. For even general principles mostly come out as the components of rational cognition when deductive methods are implemented. It means that in terms of time and space, the human being acts in a local environment so his learning object should also be finite. If the solution of a vital or even mathematical problem leads to infiniteness then it is explained such that the task has not been correctly put and its solution is impossible. The aim here is to transform the object of cognition into the finite models of the infinite world. At the same time, logical thinking itself is finite and belongs to local objects, and it only exists for the solution of solvable problems.

On the contrary, if the human being imagines his own personal life and the local environment that surrounds him as an indivisible part of infinity- in other words, if he looks at the concrete events of life from the peak of eternity and infinity, then sensory cognition as well as logical thought becomes helpless here. However, two variants are possible here. Firstly, in

return for this infinity, the human being feels himself as `nothing` and abandons hope to achieve anything with his own experience and mind in the cognition of the world. He leaves himself up to the will of supernatural powers, at best to the discretion of divine belief. In this case, in order to keep balance, it becomes necessary to connect with those supernatural powers and to use mystical methods. Mythical thinking is mostly distinguished by these aspects. The second is to consider religious emotion and the general harmony of the world as well as the idea of unity and to seek the finite in the infinite and to be based for the cognition of the finite on the pieces of information which come through the non-rational way.

In fact, the situation considerably changes if scientists go a step further from the level of being ordinary researchers as well as from the level of generalization and systematization of the empirical experiment, to wit, if they are not only limited to logical cognition and take a creative attitude towards the problem. If a research includes the pieces of information which `was intuited` in some way or another, then it could not be explained within the conventional cognitive models as well as the removal of the research subject from locality towards an infinite context could not be elucidated by these models. Depending on the research and the angle of the approaching method, what is important here is either the non-revealed (non-conscious) consciousness, or intuition, or irrational cognition, or ecstasy and prophetic revelation. However, according to the traditional approach within New Age epistemology, the sensory experiment and rational cognition are the main lines of scientific cognition. The way the problem is put and the subject of research are determined at this very level.

When and how `alien` cognitive means intervene is basically accepted as a subjective factor as well as a creative impulse. In fact, there is not here only one, but two ways.

The intersection of waysé ..

Where and how does the way, which goes from the sensory experiment towards theories and principles, intersects with the way that comes down from the divine level to daily practices?

To be sure, if each of researches of problems in different subjects is accepted as an independent chain of cognition as well as an intellectual movement then it is entirely possible that these movements that are in different directions could intersect each other. Nevertheless, here we look at the intersection through vertical lines, but not at that of the surface of the plan; and this is the very meeting point where meet those who rise up and walk down.

The data, which have been obtained by the different ways that differ from traditional research methods and their sources are unknown, are accepted by scientists as a sort of coincidence. It means that it is not certain in advance when the muse will come and intuition will be active and when a darkness will be lightened. All these are counter-intuitive and have not arisen from the logical course of cognition and healthy thinking and at the same time they are`

additions` that occur unexpectedly, like `a gift from the unseen world` or `a divine gift`. However, according to other thinkers (poets, philosophers and theologians) the human attains knowledge not in a planned, balanced and predictive manner but as a result of an inner spiritual progress and spiritual enlightenment as well as a divine gift; and other types of knowledge that are attained otherwise, are considered as imperfect and one-sided. This approach, which is widely spread in philosophy, implies that the ultimate truth could be attained not with sensory experiment and logical thinking, but it could be attained as a `divine gift` through divine inspiration, ecstasy and prophetic revelation.

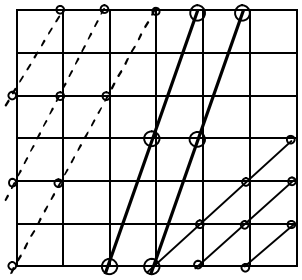
However, we disagree with this confrontation and one-sided approach. We think that either real scientific activities or philosophical researches demand to synthesize both of the cognitive ways.

Scientists have to seek outside influences whenever they cannot explain the events, which happen in relatively closed systems that they research, within the boundaries of that system. Such outside influence is accepted either as a `coincidence` or the appearances of the higher system on the lower system. For example, the emergence of a self-directed and regulated motion in the homogeneous and amorphous system (as well as in chaos) is not understood by logic. A number of researchers who consider the emergence of order in chaos almost as a sensation and the study of such non-standard events are presented as a new scientific direction and method which differ from the conventional sciences. The main reason why so much importance is attached to Synergetics is to emphasize this very `abnormality` and exception.

The synergetic method is a quiet ordinary and normal research method while it comes down through the vertical. That is to say, not only certain types of systems, but also all objects and events as well as relatively closed systems and even so-called fully closed systems, being the parts of bigger systems and infinity, are carriers of their harmony. The period of motions in large systems is larger than usual and the understanding of lower systems of their own situation, `because of not having patience to wait`, as a stationery situation is natural. And suddenly this stationarity is disordered and the new order and rule appears from amorphism and chaos. In other words, whatever exists earlier appears in our viewing circle and draws our attention. If the subject is excludes, then the equilibrium of a local system is disturbed, to wit, not depending on our observing, the balance of a local system is upset. (It is interesting that a same event could be accepted as `disorder` from one side and as `new order` from another.)

In fact, just because ordinary science works within the scopes of stationary systems and local time, it accepts the rules, which are incompatible with the system and could not be explained within the system and comes from outside (in fact from a higher system, for instance, from cosmos), as a disturbance of the inner rule.

Indeed, science is not sufficient to provide the claim (or need) of the human being to include the world as a whole. For the reason that science serves the detailed and adequate expression of the world, it could be claimed that within a scientific activity only local world, namely a certain part of the world which is included by our `viewing circle` could be learnt. Even inside the local world, rules could be chosen differently.



1. —— The diagonal creates the knot point in each small square.
2. - - - - The diagonal creates the knot point from the each two small squares.
3. ▬▬ The diagonal creates the knot point from the each three small squares.

Picture 1.

An example of the classification of the framework`s knot point and dividing it into different rules is shown in the picture. Similarly, different rules, panoramas, harmonies and structures-ornaments appear when we look over the world or a local part of it in different cross-sections and different perspectives as well as at different angles.

What is important is that the talking point here is not time-space continuum and the locality of the geometric space but the paying attention to the world from a certain perspective and the choosing a certain type of attitudes from within the complex and multi-scale attitude system and adopting them separately. It means that a number of models of the world are established and it is demanded to gather these models somehow in order to create the general scientific view of the world. In fact, because it is very difficult to reach the most general and the total view, the human cognition uses here the possibility of contrary connection. Being somehow in contact with the ultimate destination it determines not only its own orientation, but also gets additional strength for its motion. This is the very attraction of the purpose and the ultimate destination! To move being captivated by the absolute and general harmony!!! As if the human being by throwing a lasso rivets himself to the other end of the word and tugs himself. Alpinists also behave in this way. Each time the hook is thrown to the top of the destination and thus the rope becomes the shortest and most acceptable way between the alpinist and the top of the destination. The distance is overcome not only on account of brawn, but also with the support

from the top of the destination. The gravitation is not repulsed only by muscle strength but also by means of `the gravity from above`.

It is easy to rise up when the wish of `the above` is completed with the consent of `the below`.

It is impossible for a human being, who does not imagine the ultimate destination, to find way. Any moving trajectory is not yet `the way`, because a light should be seen at the end of the way. By leaving one empirical-real material to another, one could be lost within the chaotic collection of these materials. It is not possible to create a theory by collecting empirical data. On the contrary, the counters of the theory should be predetermined so that the empirical material could be correctly placed and connected, to wit, it is necessary to have some early information about the data that is sought. It seems of course too paradoxical and contradictious. It is not a coincidence that even in ancient ages Plato turned this dilemma into the subject of his dialogues. In his dialogue *Meno,* a debate between Socrates and Meno takes place. Meno asks Socrates that ` how will you ever know that this is the thing which you did not know? ` And Socrates points out the second part of the problem: ` if he knows, he has no need to enquire; and if not, he cannot; for he does not know the very subject about which he is to enquire`.[1] Here the problem towards the difference between one form of knowledge and another, namely the problem of the relativity of knowledge emerges. Science cannot go from pure darkness to light. Science seizes a ray, which has come from somewhere, and by following it, goes through the way of emerging into the daylight. This ray could not be a result of empirical researches; it comes from afar - from the philosophical approach towards the world as well as from inspiration and ardour; it is called intuition or God`s gift in different contexts.

The science can never replace the function of philosophy.

Any concrete scientific field and the special sciences reflect a certain perspective of the complex model of the world and the structure of the majority of the certain kind of knot problems. And the philosophical standpoint is the directing power for the whole view of the world. For, the fundamental principles of a great number of scientific principles have been put forward by philosophers. Heisenberg, for instance, thinks that the atomistic philosophy of the Ancient Greeks should be methodological basis for the contemporary atomic physics.[2]

The search for ultimate substance in ancient philosophy developed in a number of directions. We can divide them into two main parts. It was started either from accepting a substance (water, air, fire etc.), a number of substances, for example, the four elements (water,

[1] Plato, *Meno,* [illegible], Moscow: [illegible], 2008, I/383-384.
[2] [illegible] oscow, [illegible] 1989, p. 28

air, fire and earth.), as *prima materia*, or the starting point was not the matter, but numbers or the primarity of the geometrical form.

The concept of atomism itself is an extension of the first line. That is to say, the smallest material beginning is accepted as a basis. What is important is that after passing several hundreds of years, the development of science has eventually provided an opportunity to re-establish these philosophical ideas in the basis of experimental and mathematico-theoretical material.

I mentioned above that each field of science researches the world not as a whole, but as local problems.

The attention is drawn to a perspective or a local part of the world and this part is seemed as if it is the whole world. In fact, considering the principle of the identity of the whole and the part, each field of science researches the whole world. However, we are in need of the service of philosophy for collecting the fields of science. The development of science in the 20^{th} century was so noteworthy that the atomistic model that had been put forward by Leucippus and Democritus were driven into a corner and sloughed off by the mathematical model of the world, which had been put forward by Pythagoras and Plato. The question here is that modern physics cannot accept the atom or elementary particle as a material particle which has its concrete trajectory.

Now, we can speak of particle only with a certain probability; it is mostly easier to present it as a packet of waves. And what is the most important here is that the only thing which remains stable is the mathematical formulae. For this very reason, Heisenberg points out that the elementary particles for the modern quantum theory are mathematical forms in the last instance, they are merely more complex mathematical forms in comparison with the geometrical forms that were conceived in the age of Pythagoras and Plato.[3]

The most remarkable aspect of Heisenberg`s point of view is that he considers easier to explain the achievements of modern physics in the context of the teaching of Heraclitus. As in case the notion of `fire` is replaced by energy then contemporary scientific ideas become compatible with that of Heraclitus. [4]

The reason that made Heisenberg to address the history of philosophy is that not being satisfied with the local researches in a certain field of physics, he tries to create the general scientific view of the whole world and give the indivisible mathematical formula of the whole material.[5]

And it becomes clear that the creation of the general view is possible, without being based on a few centuries of empirical and theoretical researches, considering the more universal

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[3] Ibid, p. 36.
[4] Ibid, p. 35.
[5] [illegible] // [illegible]. Moscow, [illegible] 1971, p. 126.

notions, to wit, it is possible with philosophical approaching. On the contrary, if theoretical ideas and philosophical models had not existed, the empiric materials would probably have lost their ways. However, modern physics follows exactly the line drawn by Plato and the Pythagoreans.[6] We are now in the 21st century. If Einstein and Heisenberg had been alive, they would have probably drawn their attention to the other ideas that were put forward in philosophical teachings but at the same time scientific searches still now could not approach them. I mentioned above that Heisenberg differentiated between the two philosophical directions that the scientific-theoretical notion, which is connected with the searching of the fundamental substance, is based on them. However, there is a third direction too. It is re-emergence of the principles, which were formerly put forward by Parmenides and Anaxagoras and can be bases for not only *materia,* but also for soul. Namely, Parmenides was guided by the idea of unity. At the same time Anaxagoras and the Neo-Platonists based their ideas on the idea of `nous`. I think the development of science in the 21st century will continue with this direction. Michio Kaku, for example, writes in the preface of his book, `Physics of the Impossible`: ` So is it impossible to think we might one day be able to teleport ourselves from one place to another, or build a spaceship that will one day take us light-years away to the stars? Normally such feats would be considered impossible by today's physicists. Might they become possible within a few centuries? Or in ten thousand years, when our technology is more advanced? Or in a million years? To put it another way, if we were to somehow encounter a civilization a million years more advanced than ours, would their everyday technology appear to be "magic" to us? That, at its heart, is one of the central questions running through this book; just because something is "impossible" today, will it remain impossible centuries or millions of years into the future?`[7] M. Kaku`s fantasy, in fact, seems entirely emaciated. The problem of `invisibility` has already become one of the most real studies of Japanese researchers. For now, the concrete steps towards the screening of the object, as well as towards creating the effect of `absolute transparency` have been taken. Not only the films on `the journey to stars` as well as ` on the reading of thoughts and on the issues of telepathy` are being made, but also science itself is doing certain research studies in this field.

In a word, these quests of realizing the impossible are not only a finding of M. Kaku. It is possible to say that all the great thinkers of all times have not been satisfied with `what is possible`; they have achieved what they could, and have thrown a stone at what they could not have achieved. Some of them, in turn, have thought even on its philosophy and have presented the unattainable and unfathomable as a form of reality. In his book, `The unknowable`, Semen Liudvigovich Frank, who is an outstanding researcher in the field of the philosophy of science,

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[6] [illegible], p. 37.
[7] M. Kaku. Physics of Impossible, London, 2008, xii.

tries to explain the attempts of mind to go beyond its possibilities as a regularity. Yet Frank accepts that `our cognition is sufficient to cognize existence only within a limited circle`é Our standpoint will be clearer if we take into consideration the fact that the cognitive ability of the human being is limited not only qualitatively but also quantitatively.[8]

It is questionable that if the discrepancy between the upper and lower systems appears and if one of them is subjected to the change, then how the other one will approach this change. If we take into consideration the fact that in comparison with the lower system, the upper system, in one sense, plays the role of the environment, then this question will sound as reminding of the known problem between the central element and the environment. It reminds us of Avenarius' doctrine of the principal coordination as well as of the theory of contrary relationship. The century-old discussions towards comparing heredity with the upbringing as well as towards comparing the gene with the environment will be also remembered here..

The environmental change influences its inhabitants (the central factor) by some means or other. However, is it possible for the changing of an inhabitant to find its reflection in the environment? Or in other words, how many inhabitants, factors should be changed to consider the environment to be changed.

Or, another question arises here. Is it possible, in principle, for the factor and environment to be changed without depending on one another?

For the teaching of Abu Turkhan, which begins directly from eternity and relates the reasons of all changes to the system that has been planned and programmed on the universal scale, and which claims that nothing is accidental and a more universal harmony appears on all scales, the order of things is a ring and component of the order of the universe. If, at any stage, a certain system seems to us as chaos, it means that the time of planned intentional change has not yet reached. Therefore, all of them pre-existed in the program in advance. Merely for the reason that we are not aware of the fine structure of the system that we call chaos, we cannot also see the embryos of the forthcoming regulated motions that are hidden here.

The emergence of an order in chaos and reaching the transition time to the regulated order could be possible only for two reasons. The first reason could be taking it into account in `in the internal program`. The second reason, in turn, could be taking it into consideration in the program of the upper system, namely in `the external program`. As the condition in the lower system is conditioned by the environmental condition. When the environment changes, then its previous balance is disordered and it passes to a new condition. In this case chaos itself is seen as `a balance`. That is to say, the system-`the lower system` is established such that all its internal elements share the equal rights, to wit, they become identical. This internal `balance` is possible

[8] [illegible], 1990, pp. 218-219.

just because the external environment also does not show the initiative to disorder it and furthermore it provides the opportunity for this to happen.

The mentality that has been formed within nature study is so that further energy is needed only for establishing order. In the rest cases, the processes are intended to disorder any order and to the transition to dynamic `balance`. It is known in physics as ` the law of increasing entropy`. The increase of entropy, in turn, means the decrease of information. That is to say, further energy is needed for giving further information to the system as well as for increasing the information that it has preserved.

Every substance and event, as well as the information that the system has preserved within itself is first of all either its primary program or its genetic formation. The information that has been added to the system as a result of outside interference, usually appear at the level of macrostructure. For example, a household good is put only in a room which is filled with air. And the information about this room now will be connected to that household good. Air acts here only as a background and those who want to describe the room do not refer to the air in here and its parameters. The molecular content absolutely is not of concern here. If the second or third thing is put in the room, then their correlations to one another as well as the distance between them become the subjects of a new macro-structure and so of new information. The problem of design appears here. However, this design does not include the structure of these things, their internal structure and the information that they have preserved in themselves. In one sense they have been left aside from the structure. What is of concern here is the structure of the model created by the designer. The internal structures of things are not taken into account, that is, they are included in the background-`chaos`. The information here is, in fact, what we have included. The information that have been preserved by these things and their separate elements is an unshown and `secret` information.

As a general rule, the secret information that `chaos` has preserved in itself is not taken into consideration.

As well as the fact that there is no such thing as absolute chaos is not taken into account. The elements, in turn, are not wholly identical. Furthermore, the possibility of differing the elements, which have previously acted as identical, from each other with the change of the external environment is sunk into oblivion.

To sum up, Synergetics appears at the crossroads of the cognitive way, which rises from the bottom, and the cognitive way that begins from the top. Though the fact that inorganic systems also preserve a program in themselves and they are in fact potential organic beings has newly accepted in nature study, it was investigated in philosophy long ago.

In this respect, endeavors of evaluating synergetics like a new methodology and attempts of pushing the philosophy out of the agenda by transferring the methodological function of philosophy to synergetics bring to mind the traditional characteristics of positivism and neo-positivism. However, in spite of the fact that science develops continually it can study the universe only by adapting it (the universe) to the finite models.