

THE METHOD OF THE STRUCTURAL-PHENOMENOLOGICAL RECOGNITION

Mihai Drăgănescu
Romanian Academy

I. Introduction

In two previous interventions [1] [2] I presented very shortly the idea of a phenomenological recognition as a possible component of the methodology of science. This idea was reconsidered recently [3]. In the present paper one develops an enlarged structural-phenomenological recognition as a proposed component of the scientific method.

This component of the scientific method is not appropriate for the structural science(S-science) of today. This science recognizes only structures, based on elementary particles, fields and waves, and as such is undermined by a fundamental principle of insufficiency when it is confronted with the nature of life, mind, consciousness and with the underlying deep nature of existence [4].

The S-domain of science, or the S-science, which still prevails, and will continue to produce prominent results and applications, has many problems at its knowledge frontiers. A part of these problems will be solved by the structural science itself, and new important discoveries will be also made in the frame of the S-science, but it is doubtful that it might solve very delicate and puzzling problems like those mentioned above (life, mind, consciousness and what is, for instance, the content of the last elementary particles).

Why to pretend that the structural science is for ever the only science? This is a philosophical point of view, not a scientific one. Science is a search for truth, and the truth is, for many scientists and philosophers, not only structural. Much more, there is an evidence that structural science is submerged by a general principle of insufficiency [5][6]. Unfortunately we cannot remain only in the S-domain to explain life, mind and consciousness. It would have been better to be so. But the reality forces us to go further, perhaps in an SP-domain, which will incorporate the S-domain of science. The SP-domain means structural-phenomenological domain, which for the time being is mainly a domain of the philosophy of science. It seems that SP-philosophy of science may open a way for a SP-science. A first step was done by David Chalmers [6] and by myself [7] quite independently. The present SP-theories have, it is true, only a small and incipient scientific part. The rest is speculative. But there is a difference between a speculative theory without any ground in the S-science, as may be the case of a purely phenomenological theory, and a SP-theory which is comprising the structural science and has added its own first scientific elements.

The question of the scientific method for a possible SP-science becomes, of course, of primary importance.

Even for the S-science, the classical scientific method is no more satisfactory when scientists are obliged to accept indirect proofs of the existence of quarks, or when they are discussing the reality of the hyper-spaces only on a theoretical basis.

For the scientific enterprise is indeed very very difficult to recognize a scientific truth without a form of experimental proof, if not direct, then indirect, qualitative, or in one or a few points of a comprehensive theoretical model.

Is introspection a scientific experiment? Some aspects of introspection are so evident and general for any human that we have to take them seriously into consideration as scientific experiments. To deal with such experiments is, it is true, very delicate, but in specific contexts they might be interpreted in an adapted scientific manner.

II. Structural-phenomenological recognition

The following points seem to be qualified for the SP-recognition method:

1. One establishes an impasse for the explanation of a process or phenomenon in the frame of the structural science.
2. One tries to find out if there is a structural theory that can explain the considered process or phenomenon. If not, the impasse is complete. If it may be shown that no structural theory could explain it, the impasse is absolute.
3. If the process or phenomenon might have a phenomenological component, as it is perhaps the case for conscious processes, then it may be necessary to have recourse to an introspection of one's mental processes. On the basis of this form of experimentation, which may be repeated by anyone, inside him and not from the outside, one recognizes a phenomenological process. The nature of this process is not known to the structural science, and even not recognized by this science.
4. The above recognition has to satisfy a criterion of structural falsifiability, and if it satisfies this criterion, then the phenomenological process involved in the introspection is true and it is a fundamental process of mind and of nature.

The criterion of structural falsifiability (inspired by the original falsifiability criterion of Popper which refers to the experimental proof of a theory) is questioning the impasse of the point 2. Until a new structural theory (which comprises an experimental part) can explain the considered phenomenon, or better, if one can demonstrate that, in principle, no structural theory can explain this phenomenon, the result of the structural-phenomenological recognition is a truth.

The above method, considered as a philosophical experiment, was used for the structural-phenomenological philosophy of science that I proposed in the years 1979-1993 [7], but now this method is proposed to be considered as a component of the scientific method, in general.

III. The phenomenological sense as a fundamental process of nature

Phenomenology describes the mental experience which is presenting itself to consciousness without any theoretical construct based on the structural science or on any other theory. Husserl

introduced the phenomenological reduction by which the world is put into parentheses (the spatial-temporal world, y compris the structural central nervous system) in order to remain only in front of the mental world. He continued with parentheses for many layers of the mental world to reach a final point, noema, which is the pure consciousness.

Without any doubt, the mental experience has a phenomenological component, or phenomenological components, but which is the elementary component or the brick of the phenomenological processes?

If we introspect our own mental processes we are led to suppose that something special is happening in our mind that manifests itself as a mental sense. Every feeling, every idea, every thought, all these are in our mind with a sense which is a mental sense.

Epiphenomena or not, they are. S-science calls them, sometimes, epiphenomena exactly because it cannot explain them. S-science is in impasse in front of the mental sense. Some believe that the impasse is provisory, that one day S-science may explain it. In such a case the impasse would not be total.

But no structural theory was able to give an explanation of the mental sense, although the S-science is extremely developed. Much more, it may be inferred [2][6] that the structural science cannot explain it, because there is a difference of nature between a structural process and a mental sense. The impasse of S-science is absolute.

Being confident in the experimental character of the introspection, under the circumstances of the absolute structural impasse, the mental sense has to be recognized as a new phenomenon for science, which cannot be put into evidence by physical forces, y compris at a more detailed level by exchange of something like photons or gluons.

The mental sense may be named phenomenological sense, and as a fundamental phenomenon of nature, the phenomenological sense might have a general use in nature. At this stage, the phenomenological sense as a mental sense is a fact of reality, its existence is a truth. It seems that there is no other possible interpretation. The only possibility that such a conclusion might not be true is that in the future the structural falsifiability criterium would not be fulfilled. But today it is observed and there are not hopes not to be observed in the future.

The recognition of the phenomenological sense, under its mental form, is asking more:

- a. Which is the substratum of the phenomenological sense, respectively of the mental sense?
- b. May the phenomenological sense be considered as a fundamental process of the entire nature, and not only for the human mind?

At the question a, if we take a realistic position, the phenomenological sense, which is a process without a structural nature and not having consequently a structural substratum, must still have a physical substratum of an unknown nature.

If the phenomenological sense is a real phenomenon, it follows that its underlying physical layer is also a physical reality. There is no escape from this conclusion. We called informatter this physical reality.

The phenomenological sense and informatter are realities, provided that the criterium of structural falsificability is satisfied for the mental sense, and that from both philosophical and scientific points of view we cannot accept the phenomenological sense to come from nothing. If in-formatter is, as inevitably seems to be the case, a fundamental physical reality, having perhaps quite unusual properties, then its role in nature might be larger than its presence in brain processes.

Do we need another proof of the existence of the mental phenomenological sense and of informatter? Under the above conditions, the structural-phenomenological recognition is sufficient.

At this point, SP-science and SP-philosophy-of-science may claim that phenomenological sense and informatter are new and fundamental realities of nature (assertion A).

How informatter produces phenomenological senses, this is another question. Today this is mainly a problem for a SP-philosophy-of-science.

Another outcome of the recognition of the mental phenomenological sense and of informatter is the necessity to recognize also the existence of a coupling of the structural part of the brain with informatter. If the structural part of the brain is a reality, and it is, and if the informaterial part is also a reality, as we recognized this, then it follows that there are, at least for the brain, processes of coupling between some structures and infor-matter (assertion B). This is also a fundamental property of nature and the assertion B is valuable both in SP-science and SP-philosophy-of-science.

How this coupling is realized, this will be a problem for the SP-science. But SP-philosophy-of-science may speculate and propose structural-phenomenological models of this interaction.

IV. Consequences of the results obtained by the structural-phenomenological recognition

The above results are offering various possibilities in the SP-domain of the philosophy of science.

The speculations that follow must take into consideration also other facts about reality, and principally the persuasive arguments of the existence of a deep underlying reality [8][9][10].

The deep underlying reality is a supposition of the structural science, namely that something more exists under the quantum world. There is no other solution for the S-physics, and as such this idea has to be included into a SP-physics. So much the more into a SP-philosophy-of-science.

Informatter might be an ingredient of the deep existence, called in the universe not only by the brain, but also by any living organism. It could participate also at the constitution of all nonliving matter in the universe.

The first philosophical generalisation of the phenomenological sense, about which we are scientifically sure only for the brain, is to admit its manifestation in every living object [7][11]. There are good reasons for this.

The second generalisation is to admit the presence of phenomenol-ogical senses in the deep existence, inducing the semantic laws of an uni-verse. These laws are converted into the formal physical laws of the uni-verse.

The same generalisations follows for the informatter. In the deep existence, the phenomenological senses are not, by their nature, different of the mental senses. They are not determined by the coupling of informatter with the structures of the brain, but are generated by a natural physical process in informatter. They have an informational phenomenological character. In order to generate a physical universe, with fixed physical formal laws, it is convenient to suppose that in the deep existence there is also a second fundamental ingredient, an energomatter. The deep coupling of informatter and energomatter give birth to an universe with its quanta of space, of elementary particles and time processes.

The informatter contained in all nonliving objects of the universe, because of its coupling with energomatter, is not directly available. Be-cause informatter is still present, as such, in the universe, in the brain and perhaps in all living beings, we may generalize its presence in the universe, under the form of 'holes' among the quanta of space, holes containing only informatter without energomatter. This might be a very common presence. These 'holes' of informatter may couple (assertion B) with some structures in the universe and these complex combinations may become alive.

Much of this paragraph is speculation, but a speculation constrained either by the S-science, or by the first steps of a SP-science or by both. The conceptual structural-phenomenological models that can be built on the basis of such a SP-philosophy-of-science have to be submitted to the rules and procedures of the scientific method . Which rules of the scientific method? Only the classical methodology of science may prove to be insufficient.

V. Final remarks

Lord Kelvin (1866-1892) considered, together with many physicists of his time, that 'what you measure is all there is: 'When you can measure what you are speaking about and express it in numbers, you know something about it, and when you cannot measure it, when you cannot express it in numbers, your knowledge is of a meager and unsatisfactory kind. It may be the beginning of knowledge, but you have scarcely advanced to the stage of science'[12].

Ilya Prigogine wrote recently(1996) that ' Une theorie physique ne peut être complète que si elle inclut la possibilité des mesures'[13].

One happens nowadays that many structural objects and phenom-ena cannot be measured directly. The phenomenological processes, by their own nature, cannot be measured at all. But still some form of experimental evidence is necessary both for deciding about the existence of a phenomenological process, and for the scientific validity of a theory or model in the SP-domain.

The most critical part of the scientific method today is the role of the experiment. Can science renounce to the experimental condition for proving the truth of some theories as it the case, for instance, of the theory of hyperspace?

Perhaps science will remain always a couple theory-experiment [14], but this couple may take various forms depending on the domain of reality into which it is acting.

Notes and References

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3. Mihai Drăgănescu, Impasul structural al stiintei (in Romanian)- The Structural Impasse of the Science-,exposition at the Babes-Bolyai University, Cluj-Napoca, Romania, November 18, 1996.
4. Mihai Drăgănescu, On the Structural-Phenomenological Theories of Consciousness, January 4, 1997, submitted for publication.
5. Mihai Drăgănescu, L'Universalité ontologique de l'information, Bu-curesti, Editura Academiei, 1996; (also on the INTERNET, <http://www.racai.ro/books/draganescu>); the principle of the insufficiency of the structural science was first presented in Mihai Drăgănescu, Informatia materiei (in Romanian), Bucuresti, Editura Academiei, 253 pag., 1990.
6. This may be seen also from the theory and considerations of David J. Chalmers, The Conscious Mind, New York, Oxford, Oxford University Press, 1996.
7. In the years 1977-1989 I built a philosophy of science in which a model of mental processes, mind and consciousness was strongly connected with a general ontological model of existence. This is a structural- phenomenological (named also orthophysical) philosophy that embraces both the structural and phenomenological aspects of reality in a unitary view:
 - 7a. Mihai Drăgănescu, Profunzimirile lumii materiale(in Romanian), Bucuresti, Editura Politica, 180 pag., 1979. { There is an English version : The depths of existence (preprint 1992) with a web edition(1997) at <http://www.racai.ro/books/doi> }
 - 7b. Mihai Drăgănescu, Ortofizica (in Romanian),Bucuresti,Editura stiintifica si enciclopedica,456 pag.,1985.

7c. Mihai Drăgănescu, Informatia materiei (in Romanian), Bucuresti, Editura Academiei, 253 pag., 1990.

7d. Mihai Drăgănescu, The Philosophical Tension and the Cosmic Feeling, Bucuresti, Editura Academiei, 39 pag., 1991.

7e. Mihai Drăgănescu, Eseuri (in Romanian), Bucuresti, Editura Academiei, 302 pag., 1993

8. Menas Kafatos, Robert Nadeau, The Conscious Universe-Part and Whole in Modern Physical Theory, Springer-Verlag, New York, 1990.

9. Mihai Drăgănescu , Deep Reality, Conscious Universe and Complementarity, november 6, 1996(©To be published by The Noetic Journal).

10. This is also one of the main ideas of the orthophysical (structural-phenomenological) philosophy of science of the author [7].

11. Mihai Drăgănescu, Continuities and Discontinuities in the Realms of Life and Mind, september 30, 1996.(To be published by Revue Roumaine de Philosophie.)

12. Apud Robert A. Millikan, Electrons(+ and -), Protons, Photons, Neutrons, Mesotrons, and Cosmic Rays, Chicago, University of Chicago Press, 1947 (first edition, 1935).

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14. Lucian Blaga, Experimentul si spiritul matematic (in Romanian), Bucuresti, Editura Stiintifica, 1969.

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