

COMMITTEE III
Forms and Symbols: The Roots of Behavior

DRAFT - 10/15/85
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DISCUSSION REMARKS

by

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on

Jean E. Charon's

THE ROOTS OF BEHAVIOR IN CONTEMPORARY PHYSICS

The Fourteenth International Conference on the Unity of the Sciences
Houston, Texas November 28-December 1, 1985

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It seems that since the most ancient times of the scientific era, those interested in researching certain forms of causality have been mostly preoccupied with problems connected to various human, animal and vegetable behaviors.

In fact, be it alimentary, sexual, agonistic, explorative or constructive, behavior always remains an effect whose efficient cause or causes absolutely need to be researched. Also is it fully legitimate to talk here and there about the "Roots of Behavior", be it from an "alchemical" viewpoint or in connection with data of contemporary physics.

Personally, I'll be interested only in the second aspect - that is, in connection with contemporary physics -, not because I'm seeing there an area of my scientific competence, but rather because the analogies existing between physics and the unforeseeable behaviors - behaviors of matter as well as of living beings and things surrounding us - arouse deep interest in me.

Originally, the problems of behavior could be resumed in the research to explain the phenomena concerning the various oppositions of form and content. The ancients saw there the proof of the intervention of an extramaterial power, independant from the organism itself. (1)

(1) This is vitalism. Platon, taking up Socrates, presents a spiritualistic doctrine which searches explanations beyond the sensible world, whileas Heraclite and Democrite plead for an integral materialism and Aristote considers that the organism possesses a material structure, but remains animated by an immaterial force which is the form.

One could think that there is a sort of continuity of the series of living beings from which man distinguishes himself by his intelligence from the animal, and by his sensitivity from the plantes.

Descartes himself opposes man to the animal by affirming that the animal does not bypass the state of a machine, reacting like an automate to actions coming from the "outside, whileas man receives from "God" an indivisible soul, immortal and independant from the body. After the experiences in natural sciences of the 18th century, Lamarck and Darwin take a new step. There is first of all the problem of the living being's dependance on its environment, to show the actions and reactions which explain its nature and prove that the living being can be described only in terms of these dependences.

Secondly, the interactions of the animal and its environment hence the adjustment by natural selection, provoked strong polemics. (2)

Note that mechanism denies the supranatural finality of the organisms whileas in the beginning of the 20th century, a movement is created under the name: Organismic Approach, at the instigation of J.B.S. Haldane, L. Goldstein and E.S. Russel, with the purpose of understanding the finality without a super-natural principle.

It is clear that the general problematic around the notion of behavior encloses openly or implicitly considerations of methodological or epistemological order.

After vitalism, supranatural finality and mechanism in its general form, Jean E. Charon suggests an approach method by the bias of contemporary physics as well as a second theory in which today's physics would have something to think about: this is what he calls Complex Relativity, which he thinks applies itself to the research of the causes of unforeseeable behaviors.

(2) Fabre reproached Darwin his "finalism" for seeing only instinct in the animal behavior.

Jean E. Charon defines the roots of behavior in contemporary physics as composed of forms/symbols and the free will.

Because of the complementarity of the forms and the symbols, behavior is based upon the three following elements:

1. Forms of the outside world
2. Symbols of our memory
3. Free will which implicates the use of contemporary physics.

According to Charon, the behavior which the individual particle chooses to adopt remains unforeseeable in an infinite set of possible behaviors authorized by physical laws. He therefore suggests to admit the fact that our behavior takes its roots through a careful comparison between the forms of our outside world and the complete landscape of symbols of our internal world.

The examples from physics show that the individual particle seems to possess something that strangely brings to mind our "human free will". The Complex Relativity, very elaborated by Charon in a development of Einstein's general relativity, defines two complementary parts: one, visible, the other, imaginary. If the universe is made up of forms and their symbols, the forms represent the components of the real while as the symbols belong to the imaginary. Each individual particle of matter possesses absolutely the two complementary aspects of the real and the imaginary and finally, as complex relativity seems to show, our body reacts in the same way as the particles of matter, which, confronted with an infinite set of possible behaviors, finally chooses only one of them.

All this is possible only after Complex Relativity has shown the existence of parameters which can be represented mathematically.

There are grounds to believe, and this is one of Charon's conclusions, that the forms of the outside world and the symbols of the internal world unite and complement each other.

Considered this way, Charon's theory presents an almost unquestionable logic. Actually, science is not a catalogue of facts, and this is why the thinking man's imagination must fertilize the very facts every time he builds up a theory. And since we are not sure that it needs every complication to progress, let's simplify the definition to clarify our subject. In this sens, behavior means also to act in a certain way or to adopt a certain conduct.

May it concern particles or man or human groups, the rules of behavior have always been the object of variable prescriptions, and to execute those engenders the notion of conduct. However, the concept of behavior, even though covering a very large area, meets difficulties when it comes to its application to physical sets and organic compounds. The similarity between the behavior of a particle, of a vegetable or of a human being stays on a purely terminological level.

Only the term behavior "makes the point" and this shows us that the whole of human behaviors gives rise to social conducts which call forth the same difficulties as meets any other class of beings.

One knows that the categories of behavior can diversify according to an important number of characteristics, but they can, at the same time, belong to an action where the individual is always linked to the whole, and where each one suffers the effects of the other. The logical behavior becomes an activity with the same right as productive work or education.

The sociologists' affirmation that social facts are things goes against the systematizing of the notion of behavior as defined by psychologists and biologists. But are there really grounds for polemics around this theme when one

knows that at this very moment, "behavior" is one of the major preoccupations in the human sciences, not to forget the very successful incursions in the animal and vegetable world when one talks about animal sociology and even phytosociology.

The fundamental reflection will certainly aim at establishing the modes of understanding behavior. First of all, there are relationships, hence the existence of an object field. The forms/symbols, says Charon, make us receive sensations from the outside world and feel this world at every instant of our lives. This sensation "accumulates" in our memory former perceptions, thus generating in our mind a memorization of this same world to make it more significant.

And Charon talks about "complete landscapes of memorized symbols" which concentrate more or less on a particular region. As he says, this concentration is only possible because we have the freedom to compare. Here are, maybe presented in a scattered form, the objects to which we referred and which are all that exists or can exist in the univers. It may concern human populations as well as other objects produced by human groups; as one sees, behavior remains linked to models of relationships.

Beginning with relationships, union can be achieved. The attraction of which Charon talks can be assimilated to the fact that the positions of the particles which are brought together, cancel a certain spin form. The antiparallelism or axis opposition usually happens in connection with the exterior magnetic field.

We are talking here about a field that belongs to pure physics, which evokes problems of experimental and terminological manipulation. We don't want to arouse any polemics at this point, but we think that the axis always can change position. In this sens, the union in the spin can provoke reactions or surprising actions, at least until a rational explanation has been given to the observed phenomena. Thus, contemporary physics, as demonstrated by

Charon, is full of surprises. The observation of the surprising behavior of particles which don't have support in the Quantum mechanics, and which one tries to explain by means of mysterious signs exchanged in the moment when the particles meet, bears witness of this. The experimentation shows concomitant variations to such a point that if A goes through the barrier, B does the same and vice versa.

Each particle therefore can use its own free will and act as it likes. Since, at the moment, it is impossible to foresee the behavior which the particle will adopt, it becomes imperative to know what is going on in its interior, if we do not want to guarantee hazard "theories" or try to domesticate the particle.

In the image of the particle, and maybe here is the link between psychology :- individual or social - and physics, man often behaves in an unforeseeable manner. It is not necessary to talk here about the complexity of this being whose internal mechanism has not been explained yet in its totality. What is important to know is that in the physical and especially biological univers, everything depends on the Dalance, which maintains itself, breaks or moves according to the interactions of the composing elements. Physical laws striving to free constants in the manifestations of natural phenomena, succeed to a certain point in precisising the elements - as well as their manifestations - which are at the base of our behavior. This is what Charon presents, with much success by the way, and personally I am not surprised that he makes the analogy with life in its most intimate manifestations.

The unforeseeability of the behavior of matter is at the very base of our destiny.

May Physics or another science one day convince us of the forms/symbols of our destiny. In the meantime, allow me to wish much success to Mr. Jean E. Charon's works.