

The completeness of Physics and Biology due to the perspective of Philosophy of Nature

I Physics:

The s. c. **Standard Model in Cosmology** intends a naturalistic framework for all sciences. Its features in short:

Take as starting point of energy-matter an embryonic bubble, a nugget in the dimensions of the specific Planck-Cube of hot and dense mass [$\rho \Rightarrow \infty$; $r \Rightarrow 0$]. There may be any kind of mere natural prehistory, e. g. a limitless evolution of universes.] Then follow specific phases of expanse with special conditions of growing elementary particles until galaxies. There was no need of other powers for star and structure building than the chemical-mechanical one. The planet earth is consequently a natural product of such a birth process of galaxies and an adequate condition for the unavoidable biological evolution. Developed physics of 21th century is capable for a sufficient explaining of all energetic and material things.

For the micro-realm the physics of 20th century ended with a nearly completed s. c. **standard model of elementary particles and mutual effects**. It may be fully completed in short. Between the wings of the two standard models some announce the possible completion of physics or natural science at all.

II Biology:

Following this naturalistic gangway biology of the third millennium intends to exhaust the knowledge of physics and chemistry. The behavior of complex systems as organisms in the struggle of survive obviously delivers additional and exhausting laws to understand the result of this planetary process, namely the realm of nowadays living organisms. The process of such an evolution will go ahead so far as earthly or planetary conditions would be favorable.

III Information:

The second half of 20th century revealed information as a new object of science. The mathematician Von Neumann declared about 1950: *Information* is nor matter nor energy, but an entity of its own character. The Century ended with the insight of philosophy of science, loudly programmed by Popper-Eccles: the cosmic and organic reality exists of three pillars: energy-matter [I], the autonomous will-realm [II] and >Information< [III]. No aspect can ever be swallowed down by one of the others. The 3rd millennium p. C. will be the outstanding one of *information science and technique*. The very actual challenge is the programming of virtual organisms in the parallel universe of internet. Will there really come up a new paradigm for Biology?

IV Consequences:

One scientific aspect of the passed Century was that of quantum mechanics or quantum theory. Obviously the wrestle of deeper understanding lasted a century with at least one result: the discrete basic structure of energy behavior and space-time scaffold itself has a glue on information. That glue stuff revealed in special features of quantum theory: the s. c. non-locality or suggested hidden variables behind the visible curtain of statistics. The pure *Von-Neumann-statistics* and the timeless *Schrödinger-equation* is a sufficient approach in most partial reductive physical and chemical applications but not in complex systems, mainly concerning the physiological-chemical procedures in organisms. Here obviously a hidden information causation influences, by shifting the probability amplitudes, biological functions, mediated by collectives of elements with grades of free behavior. E.g. the molecule amounts in synapses or cytoplasm. Be aware: there is no contradiction to quantum procedures and there theoretical formulation. The need is a broader formulation of quantum aspects, possibly combined with well established physical and chemical areas as gravitation, electro-magnetic fields, entropy and chemical reactions.

All open questions focuses in one unsolved task: how to combine the meanwhile also well established information-theory with the set of relatively ripe and exhausted theory domains. But the very open task reveals in a last theory for all - called **>Theory of everything<** [TOE]. In the focus of big endeavors of unification lies the merge of Einstein-Gravity (GRT), quantum-field-theory and Quantum- Electro-Dynamics. It is very interesting, that all steps of possible unification went beyond the s. c. Planck-Curtain on the way of superstring issues, dealing with the by Einstein-Rosen-Podolsky demanded hidden parameters in additional dimensions. Now it seems that the hidden parameters reveal as needed information coordinates. The summarizing message: physics is not to exhaust and be completed without the information realm and hidden dimensions beyond the Planck-Curtain. Superstring theories may pave the way! But the clue between physical steps and information will be the by will shifted probability distribution, a specific interaction between individual instances and by will coded strings. So physics, information reality and the individual world aspect merge. But the empiric-physical result will end in the probability shifting, or otherwise said: empiric reality reveals as a struggle between physically seldom but biologically frequent contingency causation and the dominant stationary experience as the quiet normal!

Biology, by definition of subject, cannot be more naturalistic than physics: so the openness of physics on information causation counts much more for the biological realm. One must not overdo to destine organisms just as the very interfaces for motivation or will induced information causation on the physiological body shape.

To summarize the reflection on completeness of physics and biology: Is there really a, the three aspects merging, scientific theory for all? From the standpoint of philosophy of nature there is a clear no in the sense of short cutting deductive reasoning. The three pillar vision stands again!

But the very task of **philosophy of nature** should be to reflect on the interactions and interfaces of the three world aspects. May be, the task of philosophy ends with the call to hold the things open the threefold way.