

Brain storming around NEW BIOLOGY – Horst W. Beck [III-2010]

B I O L O G Y - Life's logic - Life Sciences - Philosophy of Life –

Biology is done by man, and so an outstanding activity of life itself. Thinking man and women present threefold living being in the spikes of ghost, soul, body (spirit, anima, corpus). Biology needs likewise a threefold logic and rationality; informational philosophy, informational psychology, informational physiology. >Informational< stands for a common ground-feature, bundling the three aspects. No aspect is to lower to the others. Popper-Eccles sketched such a threefold world, mainly in "The Self and its Brain" (1982ff).

Surprisingly, physics as the standard of precise science, shares now-a-days an analogue trinity in its quantum-bit basics. Each elementary particle or energy-quant appears as an informational conditioned projection of the quantum ground, the last unveils as a fog-cloud¹, a veil, which is not to grasp as a classical physical object. Quantum probability theory is the last access, dazzling the borders of objective knowledge.

Classical principle of causality sounds: *The same set of (physical) causes always produces the same (physical) effect(s)*². That's the ideal of deterministic classic physics with an immense successful application realm. But physics of the 21st century changes to a *new physics* with a quantum-informational causality, touching the threefold Popper-Eccles-world-view with this derived *epi-causality*: informational quantum bits induce the energetic, photonic, atomic phenomena by a dimensionally structured projection chain. Feynman created the bon mot: from bit to it.

The physical and biological threefold informational styled reality requests the widened causality principle: *individual agent causes – thoughts, ideas in math-forms-, bring on informational instructions to form energetic phenomena*. The results of this forming chain may in the immense amount of induced events produce s.-c. *invariant structures*, which we by observational, respective experimental experience, sum up a-posteriori as probability-laws of nature. The German quantum-theorist B. Heim proposed such a basic multidimensional quantum-field-theory as an expression of this projection causality principle. B.Heim showed, that besides the four physical forces in the frame of gravitation and electromagnetism, there are two additional effects or causes, namely by agent instances controlled information-inputs, reducing entropy and bring on geometrical structures in physical and biological systems. For our quiet normal experience, behaviour and technical handling, these effects are minimized, that classical physics is a good approach. *New physics* tends to informational cosmology or *information physics*³.

This short bypass on *new physics* seems crucial for grasping the threefold biological reality. Life sciences, or in short biology, have not > nature < in the sense of classical physics, as any timely and space-like *invariant object* for research, but rather a very autonomously and vitally acting and reacting organized reality. Consequently, the widened causality principle is to cope with. *Information physics* is the challenge for a *new biology* of the 21st century.

Information physics has two very challenging research wings: virtual and technical robotics with the pronounced vision to create *artificial life* and forget traditional in cell units and of carbonate molecules organized life, say familiar biology. The other wing: the tiniest micro-horizon of the zippy Planck-world. The Planck-bubble [10⁻³⁵ in diameter] is in vision as birth-place of elementary particles in their constitution (mass, load, spin, colour, mutual relations). In this new vision, particles, embedded in a basic information field of zippy quantum-bits – the Nobel-prize-winner Leon Lederman named this <God's Particle Field>, are informed steadily repeated projection-cycles (spins!), presenting their vital features in atoms and molecules, cells and bodies. In a meagre sense one can say: elementary particles have in a scarcely analogy to organic cells also an informational kernel, acting and reacting on bit-instructions – from bit to it.

Bio-logy, life science, shows by method, causal principal, and *object reality* not as a classical *natural science*. As *Information physics* loses this destination on basic grounds, the more recent *information bio-logy!*

New biology of 21st century stands in accord to the three aspect worldview of Popper-Eccles between the two borders:



A letter to Nigel Crompton gives a short impression of the discussion on New Biology a decade ago:

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03/04/00 - 05/04/00

Dear Nigel,

*last night I could not sleep. To do somewhat against, I read your article on "Cybersomes" for Biofachtagung. It was hardly a medicine for sleeping, but much more exciting to react to some points. A pity, that we had no time in Frialzheim. My question was, are there any bridges to my contribution? Indeed, there are! But let me first answer to your question on superstrings, which I could not fully grasp in Frialzheim: I showed a sketch from Brian Greene - Apple - Molecule - Atom - Quarks - Strings (with Planck length). - "Is there only one string of this tiny kind, constituting e.g. an electron"? The diameter of an electron is given around 10^{-13} cm. So about $10^{20} * 10^{20} * 10^{20}$ Planck cubes present the volume of a particle (e.g. electron). One string or an ensemble of 10^{60} strings? If one string - your statement -, then this string emits by its vibration in seven dimensional modes a field of tachyons in the Calabi-Yau-dimensions. This one string would count for a very specific field source. In analogy to the strong nucleon force, which is breaking down just on the borders of the nucleon itself, this mentioned tachyon field (mutual transluminal bosons) would break down just at the edge of the electron radius. May be, that one day superstring theorists may count for mass and load and radius of elementary particles. (B.Heim was successful for the load of an electron). This as intermezzo!*

"Modular Cell Biology" is a big step on the way to an integral biology. I wonder whether you have not cited, respectively mentioned, the Nobel laureat John Eccles. I suggest he being the very inventor of module theory. His brain research led to the insight, that in the case of interaction between self and brain, for instance by each act of speaking, thousands of neuro-cells are bundled to a module, called dendrites, representing a specific information complex. Further interesting results were the very quick changing of the bundles or modules - be aware: in the Planck-time 10^{-43} s! So a quickly switching module or dendrite's phase stands for a sense complex of language. Here you are on the realm of cyto-linguistics, better to say >organic linguistics<.

You have two kinds of such the organic procedures controlling or stimulating modules: inner cellular modules and modules of cell networks. R.Süßmuth dealt with bacteria collectives and sketched astounding structures of these ensembles. Depending on the place in the collective, bacteria functions and behaviour are outstandingly specialised. A typical module structure! A clear research result: information bridges between the single bacteria cells are neither chemical nor electro-magnetic (the kind of the 'Cis'-world). So one must conclude: the module structure as a whole is in analogy to the module structures of Eccle's dendrites an interaction of cell or synapses' s interfaces and - what?????. It is really mysterious. So a habilitandus, a physicist, of Prof. Süßmuth went away of the research field, to be not blamed in the church of scientific community.

I dare to reflect the <what??>. Stay near Eccles: he reflected the interaction between the active instance >consciousness< and neuro-physiology. What instances are causing suddenly appearing Modules, Cybersomes, Dendrites? The experienced causation is acting beyond the Planck-time-swell. Eccles fought for this vision a life span and won at least in principle the struggle, and became a foe of consequent naturalists. In my contribution I spoke of knowbots, agents in the Cis-Internet. As the created world exists of a hidden Trans-Internet in the Planck scale, and I am very convinced on these pleasant and amazing structure of creation, we find nowadays back to an old wisdom: Cis-Organisms in its visible molecular status have a Trans-Complement: anima vegetativa, sensitiva (sensitive conscious), intelligence.(self-conscious). These complements are as real as the visible phenomena.

As superstring-theories or >theories of everything< (TOE) with multidimensional parameters, open the way in the so far hidden Planck realm, one is stimulated to demand a realistic reflection on the >animae<. I did this in my paper and sketched a kind of analogy between Cis-agents in the Cis-internet and the Trans-complement.

To be more precise: each organism exists as a multidimensional combination of the visible and measurable molecular organism and its embedded vegetative agent [>A1<] for plant life, its vegetative and sensitive agent for animal's life [>A2<], and the threefold agent for humans - vegetative, sensitive and individual-intelligent [>A3<].

For single cell organisms may exist a collective kind-specific agent [A1c], which organises collective structures, e.g. pseudo mushrooms.

How can we picture the vegetative agent [A1]? In analogy to virtual robots these kind specific entities may be programmed with effective skills of artificial intelligence [AI]. In the Planck information matrix may be stored all needed information units, on which the agent has free access. In accord with the physicist B.Heim, on the starting point of each embryogenesis there one can see a coupling of a kind specific agent copy with the germ. The agent controls and leads the further procedures of morphogenesis. How are the causing acts to be grasped? The agent is always stimulating modules on several levels: modules in cytoplasm to activate enzymes, modules to exhaust the genes, modules to bundle cell groups for simultaneous reactions. The question arose: where is the blueprint for the whole? Surely not in the genes! Is there a blueprint stored in the Planck-matrix? The vegetative agent may be organised to work step by step, with access to all eventually needed information sets. Just as Cis-internet knowbots are surfing through the whole earthly net, so life agents may surf with Calabi-Yau tachyon-speeds through hidden store spaces of unknown size.

In conformity with Eccles's brain results, the suddenly experienced emerge and vanishing of cybersomes, modules, signal mediating, may also act beyond the Planck swell. This class of phenomena and acting lies totally outside the normal physical-chemical procedures and the used categories of molecular biology and their techniques. So a broadening of the biological paradigm is required. I state: this new paradigm is in accordance with the last stand of physics. There is indeed no reason, that biology should stand a century behind physics and information science and techniques!

What about the sensitive and self-conscious attributes of agents? Popper-Eccles intensively discussed this basic question of life-sciences and philosophy. The sensitive and will-centred aspect of life and reality can in no way be reduced on physics or information's reality. Nevertheless the capacities and abilities of those twofold or threefold agents exist. They exist only as special creations and as such are hard realities. The threefold human agent [A3] tolerates no copy. Twins and clones have there very individual agent complement as special creations. And so it is very important, that human agents [A3s] never reduplicate or merge from the characteristics of the biological parents and their accidental molecular body shape. They are as individual as special creatures are expected! Consequently the A3s are the porters and guarantees of representation and conservation of unique individuality, and not the genes! Creation biology must fight against all gene-ideology with power artillery, from Dawkins to - sad to say - E. Blechschmidt, and may be other creationists! This statement is very important on judging gene's manipulating and their results. Gene manipulating can in no case and way influence the individual core of an organisms, at least the human one. The creator has in his wisdom protected his fine tuned kind creation against man's manipulating. There's no access by Cis-techniques, with all thinkable wiliness to handle the gene molecules, on the protected secret of life. Shifting the gene set may result in a kind of intolerance and contra-harmonising between A1,2,3 and body shape, leading to death. The Planck-swell as principle border for man's might reveals the Creator's wisdom. So I am not very bewildered of gene and bio-techniques, the modern tower of Babel, to be a danger for creation. The creator keeps smiling on the hybris of his creature 'man' [Nuance of Genesis 11,5]. He is still Lord. It seems to me remarkable, that around cybersomes, or modules, affinities to language characteristics and engineering handling are obvious. At an earlier Biofachtagung the echeria coli flagellum, inclusive its electric motor, was focused. S.Scherer gave a probability estimation for a thinkable development of such a complex structure, based on gene mutation rates (s. Junker-Scherer -Evolution). It was very much against my engineering expertise and so I sketched roughly a paper, in which I counted the amount of minimally needed instruction commands for a flagellum motor. There are no such instruction commands - in principle an instruction set on a Turing machine - in the genes or cromosomes! I criticised an argumentation using pure combination probabilities as in no way biological. This thinking stems from the ninetyth century view of a deterministically arranged billiard ball world, where all things are nothing else than mechanical combinations of stable elements. And now I am glad reading in your article, that with the operations of modules engineering and linguistic aspects are demanded for biology.

As you are keen of organic linguistics, take the by Eccles described procedure of mediating will rooted instructions by a conscious self, transformed into information complexes to cortex modules, mediating the neuro-system to specific muscles, forming over-modulated noise waves to be received by a communication partner

and vice versa. Are there really 'words' carried over? What are the transported linguistic units? Do cybersomes represent any linguistic units?

Henry Bergson's brain-mind theory, forecasting Eccle's view, concluded: Original "thinking" by the self-conscious isn't bounded on a historical language. To speak is like to select out of a kind of unlimited visionary thinking and willing reduced information complexes under specific linguistic rules, to mediate it to a partner. The message will be transported through the organic channel, by conform to linguistic rules conditioned modules.

The British famous mathematician Roger Penrose [The Emperor's Mind 1989], reflecting on logic, the mathematics' way, mind, brain and thinking, came to the astonishing conclusions: there are ideal created entities beyond mathematics and thinking. The >non-verbality of thought<, immediately experienced by self-conscious mind, means sharing this ideal world. So mathematics and applications as physical laws are always reducing fractions of reality. Consequently physics with all available mathematical skills can't grasp the mind-body experience. ".(418) Inspiration, insight, and originality is the way that (some) artists can keep the totality of their creations in mind all at once. ...The globality of inspirational thought is particularly remarkable in Mozart's quotation ('It does not come to me successively . . . but in its entirety') and also in Poincare's ('I did not verify the idea; I should not have had time'). Moreover, I would maintain that a remarkable globality is already present in our conscious thinking generally...Also Hadamard himself writes: I insist that words are totally absent from my mind when I really think and I shall completely align my case with Galton's [Francis Galton, a eminent geneticist] in the sense that even after reading or hearing a question, every word disappears the very moment that I am beginning to think it over: ... and I fully agree with Schopenhauer when he writes, 'thoughts die the moment they are embodied by words' .."

What's the touch on >organic linguistics< or module theory? The threefold will oriented human agent, the trans-complement of visible human body, has by will stimulated access to body interfaces. The cortex is only one cross section. Other interfaces are parallel switched cell groups: further the gene realm or the cytoplasm. The human agent [threefold anima = >A3<] has always the whole in vision, as artists as Mozart had the totality of their creation in mind. So all trials to find the blueprint of the whole organism in the gene's realm failed and are a quit absurd imagination. Some would say, the special created self conscious agent [>A3<] is 'sharing the divine consciousness', others as Penrose: 'sharing the ideal Platonic world'. In any case one can more modestly say: >A3< has free access on the creation's basic information matrix, stored in the digital Planck corset. There all basic types of created organisms may be stored by specific instruction sets or kind oriented organic expertise systems. What's about embryogenesis on this marvelous background? The >A3< activates step by step, depending on the stage of development, module features. For instance, the divinely created >A3< activates or creates, in conformity to available background information, cybersomes in cytoplasm, or he fixes and looses modules on the DNA-chain. The picture: the agent zaps along the gene chain, or he bundles neurocell-groups as firing entities, or whatever. If you can take psalm 39 seriously: "My substance was not hid from thee, when I was made in secret, and curiously wrought in the lowest part of the earth". , you find by agent-module-theory a picture of "curiously wringing". "The lowest part of the earth" may be now understood as the "trans"- complement of life, the dark or hidden matter [DM] in conformity of recent cosmology and superstring theory.

You may radically backfire: has this kind of >Bio-philosophy< anything touching or common with my science? I return: Do you know any point as really contradictory? Than put it on desk!

I hope that my lofty reflections can be somewhat helpful finding new paradigms in recent creation biology. That's our common task by honoring our creator!

Don't feel pressed to answer. But I would really enjoy some critical reactions.

Be with Angela and your whole family in the Easter joy: Christ has really risen from deathly Cis-world unto the new hyper-space body, raining all creation spheres, bridging the gap between the Holy Father and His creation [Col 1,15f].

Yours in Christ

Signed >hwb<

New Biology between *New Physics* and *New Cybernetics* turns from naturalistic self-organizing dreams via chance, vast time, and selection, inspired by 19th century mechanistic physics, to a quiet another all life-aspects bundling *new paradigm* according the Popper-Eccles three world-aspect-wisdom.

New Physics shaped as information cosmology proofs the embedding of all created entities in a multidimensional quantum-bit field, which stretches the space-time itself in three space-like and mathematically styled hyperspace coordinates. What ever rival quantum-field and string-theories to ontological textures reveal, these items could be marked:

a) The stretching medium is the mystery of light, the all persuading electro-magnet cosmic field in dimensional diversifications. There is an information mediating ground-state in vision with $c \rightarrow \infty$, $\hbar \rightarrow 0$. Information-causality seems quasi timeless. This three-dimensional by $c \rightarrow \infty$ woven net with the Planck-wave-length l_{Planck} (10^{-35} m) brings on the Planck-cubes as zippy string kernels, the birth-dots of informed particle features. The quantum-theorist B. Heim stated: each Planck-cube may be for a cosmic super-mathematician algorithmically addressed. Just here is the widened causality principle anchored: *individual agent causes – thoughts, ideas in math-forms- , bring on informational instructions to form energetic phenomena*. For man in his body-shape of *this eon*, this happens quasi timeless. The Feynman-spot: *from bit to it*, Biblical: *He speaks, and it is*. No *law of nature* is hurt! The *law of creation* is stated!

b) KIP S.THORNE: „*The quantum foam is overall present*“. There is no created entity – elementary or complex - at any space-time-point out of control. *New physics* admits, that e.g. a free or bounded electron lives steadily stabilized from the quantum-impulses of the embedding quantum-vacuum. Without these effects, no stable atom! *New Biology* has likewise to recognize, that all biological entities, relations, functions, could be affected from the embedding quantum foam.

c) The basic paradigm of *New Biology* hire from *New Physics* and *New Cybernetics* the fruitful imagination of embedded organisms in a fantastic quantum-bit-field with the derivates: behind each individual organic entity, from the one-cell kind onto man's threefold body-shape lies hidden an agent hierarchy, virtually existing in the all persuading cosmic-wide-web, named cww. The analogy to the global – internet-www, highlighted in the virtual agent presentations, handling globally distributed expert-software, comes up.

d) The sketched ground-state of this the space-time presenting and overall persuading cww may be totally supervised by Holy Trinity, ruling by myriads of created agents, named angels in religious speech. Original creation bestowed cww with this living armament. Original creation equipped CWW additionally with basic kind-software, distributed in the quasi endless store-capacity in expert-software-modules. As a www-artificial knowbot handles globally distributed software case by case, so the way of embryogenesis could be analogously understood as the autonomous acting of a by the creator gifted soul, spirit, anima, nous. I privilege – to be modern - hyper-space-core > HyCo <.

e) The above vaguely touched features of *New Biology* joint in the challenging task of future research: B. Heim, the quantum theorist, spoke of the coupling of a HyCo by the sperm and egg-melting on the quantum-start of each embryogenesis. The leading and controlling agent-hierarchy must be steadily in vision. At each step of further embryogenesis, the HyCo has access to needed basic-type adapted special software-modules stored not localized in cww (non-locality of quantum-field-theory!). Lucky situation, that *New Cybernetics* offers a differentiated categorical system for application in *New Biology*. (*New Cybernetics* is meanwhile big science, overwhelming >Old Biology<). What an inspiring epi-genetic! But interacting and coupling of the cybernetic hyperspace-background with the organic physiology is only the downward-causation's way to handle. Classical physics is out done, quantum physics lets the fog-cloud-veil closed.

f) Original creation, founding the appointed *new causality – from bit to it -*, was in this sense perfect and finished (Gen 1,31-2,1). > *THUS THE HEAVENS AND THE EARTH WERE FINISHED, AND ALL THE HOST OF THEM.* < The cww was perfect, with all the host of them. There was no expert-module forgotten. Christian believers don't worry on possible out-dying of originally created basic types!. On cww-original and ever lasting background, the Triune Creator leads the creation through the salvation history, inclusive the real history of life. *New Biology of this eon* is a challenging and the Creator honouring task!

f) *New Biology* seems in se a categorical barrier for evolutionistic interpreting of life in recent or historical perspectives. But the naturalists are in the start-holes to conquer also *New Physics* and *New Cybernetics*. They are landing in monistic spirituality. *A new religion!*

¹ H.W.B.: Where I agree or disagree with Barry Setterfield's cosmology issues, or else may be go beyond [II, 2010]. www.institut-diakrisis.de/Dialog_16_02_10.pdf

² Peter J.Riggs: Quantum Causality. Heidelberg et al. 2009, 6ff. .

³ Tom Stonier: Information and the Internal Structure of the Universe – An Exploration into Information Physics. London 1990.