

23rd Annual Gatherings in Biosemiotics
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**The thresholds for extending
evolutionary synthesis.
How far can we go?**

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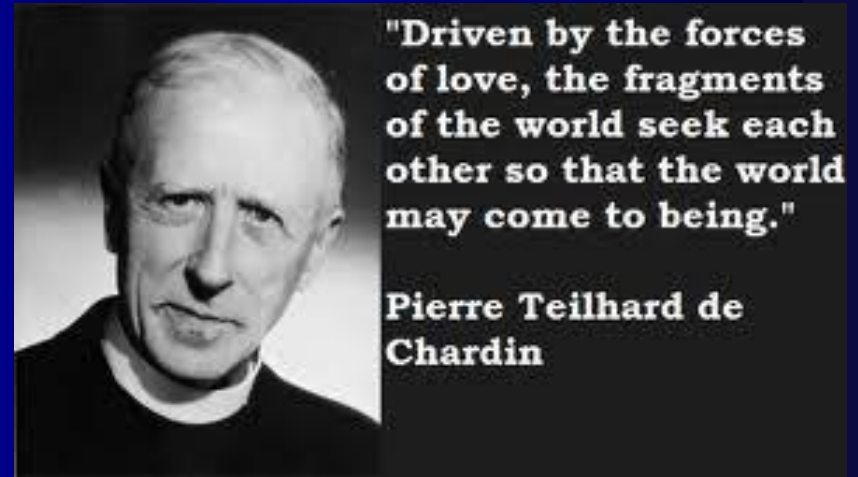
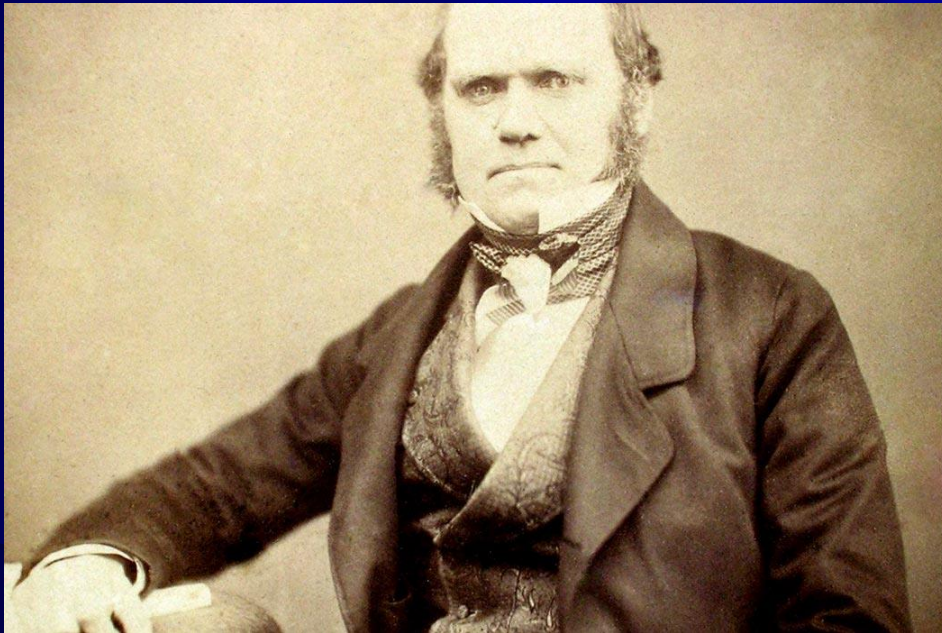
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**Thank you for bringing us here
again into the same room and
building that the inaugural
Gatherings in Biosemiotics was
held in 2001**

**For as the sun is daily new and old,
So is my love still telling what is told.
I close my eyes and look again at you
And see my love is ever old and new.**

Whilst this planet has gone cycling on according to the fixed law of gravity, from so simple a beginning endless forms most beautiful and most wonderful have been, and are being, evolved.



I have not tried to discover a system of ontological and causal relations between the elements of the universe, but only an experimental law of recurrence (*une loi expérimentale de récurrence*) which would express their successive appearance in time.

Le Phénomène Humain

**L'Homme, non pas centre statique du Monde, —
comme il s'est cru longtemps ; mais axe et flèche
de l'Évolution, — ce qui est bien plus beau [11].**

**L'Homme, non pas centre de l'Univers, comme nous
p.249 l'avions cru naïvement, — mais, ce qui est
bien plus beau, L'Homme flèche montante de la
grande synthèse biologique. L'Homme constituant,
à lui seul, la dernière-née, la plus fraîche, la plus
compliquée, la plus nuancée des Nappes
successives de la Vie [152]**

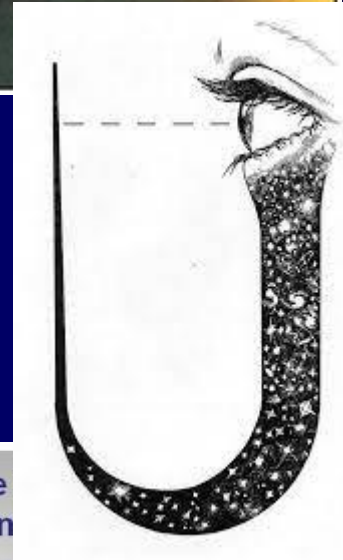
Anthropic principle(s)

- The weak anthropic principle (WAP)
- The strong anthropic principle (SAP)
- The participatory anthropic principle (PAP)
- The final anthropic principle (FAP)

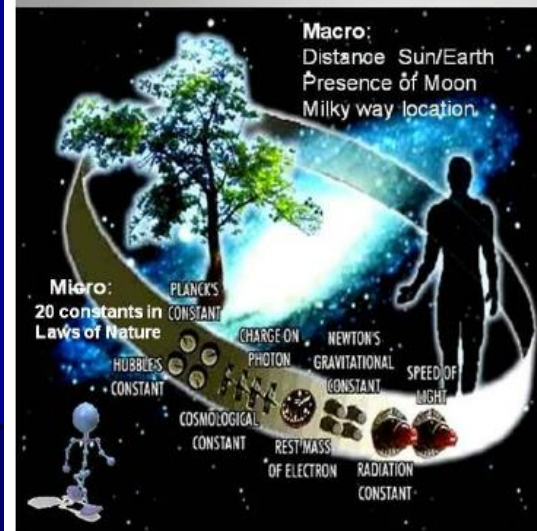


Anthropic Principles

- **PAP (Participatory Anthropic Principle)** – a SAP variation based on Copenhagen interpretation of quantum mechanics. It is based on the idea *observation makes real*.
- **FAP (Final Anthropic Principle)** – “Intelligent information-processing must come into existence in the Universe, and, once it comes into existence, it will never die out.” – “At the instant the *Omega Point* is reached, life will have gained control of all matter and forces not only in a single universe, but in all universes whose existence is logically possible; life will have spread into all spatial regions in all universes which could logically exist, and will have stored an infinite amount of information, including all bits of knowledge which it is logically possible to know. And this is the end.” (Barrow and Tipler)



The Anthropic principle: the universe such that creation of life was in



Teleology ?

The temptation to believe that the Universe is the product of some sort of design, a manifestation of subtle aesthetic and mathematical judgement, is overwhelming.

The belief that there is something behind it all, is one that I personally share with a majority of scientists

A. Einstein

Anthropic Principle

The Anthropic Principle implies that interpretation along with observation, calculus and patterning is universal and applicable to any state of the Observed (measured, shaped and interpreted) Universe or its constituents.

But it is even more evident that interpretation as we use it in our everyday lives – moreover in social and human research – cannot be bluntly applied to study of life forms or molecules or galaxies.

Phenomena are processes

Our claim is even more radical than the title of this slide.

When you use nouns you immediately turn phenomena into abstract entities or notions.

Notion of life correspond to phenomenal living –

thought to thinking,

language to languaging,

action to acting,

invention to inventing,

emergence to emerging.....

Distinguishing distinctions

Two instrumentalities

- Ultimate distinctions as abstract, methodological instances (disembodied schemata)

initial situation model – singularity

res extensa versus res cogitans (non-problematic)

- Empirical distinguishing of distinctions.

actual *me totum* in between abstract rei

cogito ergo sum – interrelation of actual embodied processes (problematic)

Empirical distinction

For ages people have been distinguishing form and substance. They often find it very problematic, particularly when they try to apply them empirically.

Louis Hjelmslev happily distinguished content and expression planes within the re-integrated lingual phenomenal domain of langue-parole-langage.



Empirical transferring

Hjelmslevian happy layout of two planes – **expression** and **content** ones – can be exported beyond the linguistic domain.

Methodologically such an arrangement of opposite – **similar albeit inverted** – structures allows to multiply modes of actions and transform them from one domain to another, e.g., from the mental one to acoustic and back, from logical into grammatical and vice versa etc.

All between domains of speaking, thinking and interacting agents.

Recursion with an inversive switch

Our research revealed that a recursion with an inversive switch becomes a prototypical algorithm of action.

It is a three-step “waltzing” movement. It includes a retreat (turning back), closure (fixing the achieved minimum) and transfer (turning the differential between the minimum and maximum of possibilities into a new instrumentality).

Inversive switch



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Oom-pah-pah! Oom-pah-pah!
That's how it goes
Oom-pah-pah! Oom-pah-pah!
Everyone knows
They all suppose what they want
to suppose
When they hear oom-pah-pah!



Eleven or more

Hoffmeyer and Stjernfelt in “The Great Chain of Semiosis” singled out eleven “steps” of semiosis 1) molecular recognition, 2) prokaryote-eukaryote transformation (privatization of the genome), 3) division of labor in multicellular organisms (endosemiosis), 4) from irritability to phenotypic plasticity, 5) sense perception, 6) behavioral choice, 7) active information gathering, 8) collaboration, deception, 9) learning and social intelligence, 10) sentience, 11) consciousness : 1) molecular recognition, 2) prokaryote-eukaryote transformation (privatization of the genome), 3) division of labor in multicellular organisms (endosemiosis), 4) from irritability to phenotypic plasticity, 5) sense perception, 6) behavioral choice, 7) active information gathering, 8) collaboration, deception, 9) learning and social intelligence, 10) sentience, 11) consciousness. **I suggest the list is open both ways.**

No limits! Only thresholds!

Biosemiotic thresholds are an increasingly popular topoi in this community of ours. Some people present here in this hall contributed to this debate.

It turns out that thresholds are multiple and numerous.

One can fix limits to transformation only on **linear scales**. Making transformations multidimensional turns supposedly **fixed limits** into **thresholds**, or rather evolving **cascades of thresholds** best interpreted as **complex manifolds**.



With love's light wings did I
o'er-perch these walls, for stony
limits cannot hold love out

- William Shakespeare

AZ QUOTES



How to call it?

How to call phenomena of transforming from one phenomenal domain into another?

Definitely not by a noun with –ism. With all the appeal of synechism, tychism, panprechism etc.

Abstract noun may sound somewhat better, but still not as good as verbal form with –ing.

We are still not very happy and continue to think of better expression mode or may be even multimodal complex containing the tune of Ooom – pah – pah...

Experimental law of crossing thresholds

We sum up our presentation by emulating Pierre Teilhard de Chardin.

It is an attempt to formulate an experimental law of crossing thresholds *une loi expérimentale de franchissement de seuils.*

Whenever you cross a new threshold you necessarily have to cross all the thresholds that had been crossed in the evolution already accomplished that far.