

Time ecology method

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"[One] cannot solve a problem with the same level of thinking that created it" said Professor Albert Einstein. A new modeling [1] developed as 3 layers 4:3 dimensions frames may contribute to understanding how macromolecular complexes ultrastructure can influence cell physiology, and the reverse. As those 3 frames, 4D:OLI:LOI, connect to the concept of time and the dynamic perception of the flows in time ecology [2].

Are labeled [3] microorganisms oscillatory responses healthy or would those entrain inflammatory loop cascades? Is it fundamental, to gain an understanding of live cells, those forming living systems, to account for time and sound?

Background incl. aims.

The LOI (Location-Ownership-Internalization) dynamic conceptual positioning, enveloped in OLI (in existence since 1977), a static envelop, and the 4 structuring environmental dimensions, the chemotaxis motives of the environmentally active actor, as the: market, resources, efficiency (in existence since 1974) and strategic asset: associated with the notion of the time internalization, are various theoretical tools to conceptualize about time, timing, and transitions inside living systems.

Internalization is a synonym for assimilation, for instance to quantify the assimilation of radioactive labeled or stable-isotope-labeled substrate (in single cell) to study the cell ecophysiology [3].

Combining LOI:OLI:4D frames together form a wider system view, as if several foreign languages would be simultaneously used to characterize one unique situation. This approach could be more specifically used to distinguish between macroscopic and microscopic entropy, to develop inferential statistics (see Results).

One purpose would be to conceptualize the formation of sound matter, based on a theoretical understanding of past literatures [4] to close a gap between cognitive psychology and the perception of sound as music.

Methods.

Imaging of microorganisms can be performed using the expansion microscopy to visualize intra- and extra-cellular components as well as the cellular ultrastructural context (the environment). Based on the tridimensional thinking described and the understanding of HOH molecules configurations dynamics [1] an understanding of time ownership could be formed from a multidimensional spectral sensing of 3 dimensions: hearing (sound goes faster than neural transmission speed. [2]), color vision and olfaction (most odorants do not contain nitrogen). The research could also focus on linear thinking, or one single ribbon, with the focus on the role of neuropeptides (one CCK, -4 or -8S), and NO; neuropeptides as signaling molecules, e.g. bombesin like peptides, can modify nerve impulse. CCK may have a universally conserved role in cognition depending on how significant lipids are in individuals' diet. I could defend the relevance of odd-chain fatty acids for the stability of thinking (gluconeogenesis) about complex stressful situations.

Time to be owned must be internalized. An envelope is thus necessary as a rigid frame to enable the dynamics to become dense enough to be observed.

The logic for dynamics to emerge is: first a location (minimal viable cavitation) will be required for resources to be gathered, which may become internalized or future resources would first be owned, before to become further internalized.

Results.

Accounting for time in research would imply to reveal time soft matter, beyond time measurement, dynamics. Or unpacking signals from noise using gentle ultraweak-photon emission intensities as non-invasive [3] spectroscopic tool for diagnosis of internal states.

Going back to the Viennese physicist Ludvig Boltzmann's aim to discover one objective interpretation of the law of increase of entropy in terms of microscopic mechanical properties of the system, the LOI [1] model of time internalization could be applied to understanding thermodynamics: hypotheses could be formulated regarding variables causing structural or transactional flows failure. The flow is driven by the hopping from electrons: a quantum-mechanical tunneling. Hopping is a long-range transfer across redox chains (oxidized radicals) using multi-step tunnelling. The process is required in several natural enzymes, it involves vibrational mode from hydrogen tunneling, producing volatile organic compounds.

Conclusions.

"Thermodynamic quantities should be assigned, not to single systems, but to ensembles of systems having a given probability to occupy this or that point in [...] space." [5]. The LOI [1] dynamics based on the dipole moment of HOH mirror important biological models. Those would be forming, or contributing to form, the 'awareness' or 'consciousness' factor of human cognition, or a 'Zeitgeist'.

The "chance factors" forms the major influence from the surrounding. It is important to account for the constant novelty provided by one surrounding. These can be observed through taking a standard view (proposed here). A system view is a simultaneously joint exploration of dynamics and the intersections: the fluids inside their enveloping structures. A system view can be systematically developed around 3 dimensions, as the dynamic framework: LOI, which is also embedded inside a static 3 dimensional frame: OLI.

Keywords:

Time ecology. Time internalization. Ecophysiology.

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