

Review of: "Provisional Definition of the Living State: Delineation of an Empirical Criterion that Defines a System as Alive"

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Potential competing interests: No potential competing interests to declare.

Briefly, the author described the characteristics that define a system as alive and what is necessary to determine consciousness. These criteria are intended to provide a provisional definition for when matter and energy are in the state of living being. In addition, referring to the theory of the unified space-memory network, he suggested that the far-from-equilibrium thermodynamic state at low entropy is not a fundamental requirement of living beings.

The statements provided in the manuscript sometimes sounds hazardous.

Several concerns arisen from reading the current version of the manuscript:

First, I suggest giving more addressing information of what means *the theory of unified space-memory network in addition to reference*.

The author's main statements on life and consciousness and his claims of acceptable proofs aimed at explaining life in its essential nature are a recurring topic already addressed countless times by other excellent scientists. For instance, Humberto Maturana was keen in observing and understanding how living beings are dynamically organized and how organization plays a fundamental role into the health and consciousness in an ecological vision of life.

I agree with the author about his claims on the current scientific approaches in studying life based mainly on the mechanistic idea and computational vision of a physical real world. Nevertheless, despite the enormous efforts already carried out in this field, when our object of study is Life, as scientists we struggle to give acceptable demonstrations of what could explain spontaneity and unpredictability of life phenomena.

The author argues that only aspects such as volition or object-oriented volitional agency can demonstrate whether an organism may be sentient and therefore alive. However, it remains difficult to observe the volitional agency in all living organisms or, as hypothesized by the author, in artificial intelligence.

When author stated that “all living beings, including humans, are considered automatons”, the author underestimated the complexity, awareness, motor self-agency of living beings compared to automatons and in general, machines.

The statement “all organisms are living systems, not all living systems are organisms” is confounding. This reviewer suggests to discuss this point also in light of already existing statements on what “self” is and its organization (i.e. autopoiesis and cognition by Humberto Maturana and Francisco Varela).

The statement “the Universe is a living sentient system” sounds hazardous. It should be rephrased or widely discussed also taking into account other point of view.