Review of: "Thermodynamics, Infodynamics and Emergence"

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Potential competing interests: No potential competing interests to declare.

Comments on: “Thermodynamics, Infodynamics and Emergence”

The main goal of this manuscript is clear. It is possible to use the thermodynamical tool of free energy to address the issue of emergence, becoming increasingly popular in the field of complexity, by using information as a way of reducing entropy.

I see that the author with the help of some important references, establishes a connection with the edge of Chaos, suggesting in my opinion, the tool of phase transitions. I find also very interesting the arguments of the paper “The collective intelligence of evolution and development” (Watson and Levin, 2023) quoted in the manuscript.

While the collective intelligence of a social system is generated by the interaction of many individuals, the individual intelligence is generated by the interaction of many neurons, thereby being a form of collective intelligence. I imagine that the author of this interesting manuscript claims that his picture applies to both forms of intelligence. My main question is therefore if emergence in both cases may be connected to the condition of being at the edge of chaos.

I would appreciate some comments by the author on this issue.