

The Quantum Essays: The meaning of life, negentropy, an...

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I posted another in the [Quantum Essays series](#) yesterday. In response, Schofield, who is a regular commentator on this blog, [wrote](#):

The big question ... is does consciousness exist to allow life forms to cooperate? Does it also exist to facilitate the development through cooperation of ever more complex life forms, and to what point?

This gave rise to a lengthy discussion between Jacqueline and me, both of us having always worked on the ideas in this series. This was because what that question posed to us was the existential question 'what defines life?' We have, in any case, been discussing this question lately, precisely because it is one that is so difficult to answer.

This Quantum Essay is our response to that most fundamental of questions, set in a political-economic context, of course.

Other essays in this series are noted at the end of this post.

Life, Negentropy, and the Politics of Staying Alive

Erwin Schrödinger, in **What Is Life?**, wrote that living organisms “feed on negative entropy.” He meant that life is a process that keeps order going: it is a temporary rebellion against the universe’s inevitable drift toward disorder as dictated by the [second law of thermodynamics](#).

The phrase “feeding on negative entropy” is more than a line of physics. It might just be the most concise description of what it means to stay alive, not just biologically, but socially and politically too.

Life, in its essence, is, as Schrödinger described it, the capacity to maintain complexity. It draws in energy, organises matter, and exports waste to remain far from equilibrium.

When the energy stops flowing, the pattern collapses. Entropy wins. Death, in this sense, is simply the point where equilibrium is realised.

My suggestion is that the same logic applies far beyond biology. Human societies are living systems too. They require constant flows of energy, information, and cooperation to sustain their structure. When those flows are blocked, whether by fear, hierarchy, or the hoarding of resources or knowledge, then entropy begins to rise. As a consequence, systems close down, voices are silenced, and diversity shrinks. The result is that what once was alive begins to decay.

This is particularly relevant in our current world, where entropy is not an abstract concept. We see its impact in the closing of minds, the narrowing of media, and the suppression of dissent. We see it when governments declare that security depends on obedience, when universities retreat from critical thought, and when markets pretend that speculation is productive work. These moves towards stasis are all symptoms of a system approaching thermodynamic death, which happens when it has lost its openness to new information.

Negative entropy, or negentropy, in contrast, depends on the existence of flow. Life demands exchange, conversation, cooperation, and renewal. Only by doing these things is the perpetual struggle to stay alive, which can be seen as a fight against entropy and the equilibrium state of death, won, at least for the time being.

Life, then, is defined by being in a state of negentropy; only when that can be achieved can an entity be considered to be alive. When negentropy ceases, decay takes hold, which we must all have observed as a matter of fact.

The same applies to democracies and economies. They stay alive only when they are open to feedback and capable of self-correction. Openness is their metabolism. Dissent is their respiration. Without these, equilibrium, or the stillness of death, inevitably approaches.

So the challenge before us within political economy is a simple one, and at the same time, immense. We must design systems that permit negentropy in our politics, our economies, and our collective consciousness, or we will fail. That means:

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Creating systems that encourage participation and distribute energy (whether in the form of income, resources, knowledge, or decision-making power).

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Keeping channels of feedback open, so that errors and injustice can be recognised and repaired.

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Protecting diversity is not a moral luxury but a thermodynamic necessity.

If life is defined by its ability to resist decay through the exchange of energy and information, then the task of politics is to keep the social organism alive, or to put it another way, to prevent its closure into authoritarian equilibrium.

Schrödinger's insight was scientific, but its echo is ethical:

To be alive is to cooperate with others in maintaining the improbability of negative entropy within a system where entropy is always eventually (but hopefully, and with careful management, at a distant point in the future) going to win.

That is as true for any living organism as it is for a society. Our survival depends on our ability to continually create negentropy, or to keep creating, caring, imagining, and rebuilding our lives and the societies in which we live.

When we stop doing those things, the system comes to an end. The greatest political choice we have to make is whether we want that to happen or not.

Musical coda

I can't resist this:

https://www.youtube.com/watch?v=I_izvAbhExY&si=SOtRaLTJz3UErA8B

Other essays in this series:

- * [***The Quantum Economics series \(this link opens a tab with them all in it\)***](#)
- * [***The Quantum Essays: Observing and Engaging***](#)
- * [***The Quantum Essays: Quantum MMT: The wave function of sovereign spending***](#)
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