Qeios

Peer Review

Review of: "A Heuristic Sketch of How It Could All Fit Together with Time"

Matej Pavsic[1]

1. Jožef Stefan Institute, Ljubljana, Slovenia

Thomsen offers a refreshingly holistic and conceptual approach to fundamental physics. Instead of chasing a singular "Theory of Everything," he embraces pluralism, suggesting that Quantum Mechanics, Relativity, and Thermodynamics are distinct but mutually dependent pillars of physical reality. This is intellectually bold and conceptually stimulating.

The paper is rich in philosophical reflection, touching on:

- The limits of human cognition
- Gödelian incompleteness
- Emergence as a core scientific principle
- The impossibility of fully objective “outside” perspectives in physics
- This kind of meta-level awareness is rare in scientific writing and adds depth.

By linking physics, cognition, thermodynamics, and information theory, Thomsen proposes a braided model of reality that’s flexible and context-sensitive—qualities well-aligned with the real-world complexity that reductionist models often fail to capture. Thomsen is unafraid to question mainstream assumptions, such as the necessity of inflation, dark matter/energy, and many-worlds interpretations. Whether or not one agrees, this skeptical stance encourages productive debate.

Despite covering deep and speculative territory, the writing is remarkably readable and well-organized for a high-level conceptual paper. The triskelion metaphor and narrative style help readers stay oriented.

But the paper is entirely heuristic—which is by design, but still a limitation. There are no new equations or testable models, so while the ideas are rich, they remain qualitative and speculative. Some arguments, like the proposed irrelevance of inflation or dismissing the need for dark energy, risk oversimplifying active research fields. These claims would require much more rigorous support or references to concrete models to be convincing.

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The breadth of the paper is impressive, but sometimes comes at the cost of depth. Key topics like emergent gravity, quantum reference frames, or entropy production are introduced briefly and then moved on from, without a thorough technical analysis. While the concept of emergence is central to the paper, its primacy is assumed more than demonstrated. The idea that all reality can be derived from mutually inducing emergence is compelling but needs further thorough exploration. Although the paper touches on alternate theories, it does not deeply engage with counterarguments or criticisms from mainstream cosmology or quantum gravity approaches.

In conclusion, Thomsen's paper stands out as both thought-provoking and valuable, more as a conceptual and philosophical manifesto than a technical treatise. It challenges prevailing assumptions, opens new intellectual pathways, and offers a fresh perspective on how we might frame the foundations of reality. That said, its speculative nature and lack of formal rigor limit its immediate influence within mainstream physics. Nonetheless, it functions effectively as a catalyst for dialogue—a compelling vision for approaching unification through a more humble, pluralistic, and emergent lens. For these reasons, I believe the paper deserves to be published.

Declarations

Potential competing interests: No potential competing interests to declare.