

Peer Review

Review of: "From Coherence to Control: A Non-Systematic Approach to Multi-Parametric Phenomena"

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Sandu's article provides a conceptually rich reflection on experimental practice in far-from-equilibrium systems. The central argument, that variability and unpredictability should be treated as generative rather than as errors to be controlled or isolated, is significant for several reasons. By framing the experimenter as a participant in relational processes, rather than as a detached observer, the paper aligns with contemporary debates in posthumanism, feminism, science studies, complexity ethics, relational epistemology, and arts-based research.

Sandu's participatory methodology resonates with long-standing intellectual traditions that warrant explicit engagement. Goethe's *zarte Empirie* (delicate empiricism), as discussed by Wahl (2005), is particularly relevant. Goethe refused to isolate organisms from their native environments. Instead, he advocated for sustained observation in situ and attendance to dynamic processes. Like Sandu, Goethe positions the observer as integrally involved, perceiving the whole and its unfolding. Explicitly situating Sandu's approach within this long Western thought lineage would strengthen the manuscript's conceptual framing and historical grounding.

Similarly, Bai and Banack (2006) frame ethical and epistemic responsibility as emerging from interdependent, dynamic systems. Their complexity ethics complement Sandu's ideas, emphasizing that attentiveness in experimental practice is not only methodological but moral. Behrisch (2021) extends this perspective through "shapeless listening to the more-than-human world," highlighting disciplined attention that balances coherence, complexity, and human mattering with potential human insignificance within the universe. Sandu's discussion could be deepened by clarifying the relational and embodied nature of observation.

Indigenous epistemologies, particularly Robin Wall Kimmerer's *Braiding Sweetgrass*, illuminate participatory, relational, and place-based knowledge systems. Acknowledging these approaches would broaden the paper's epistemic frame and reinforce ethical and relational interdependence between the observer and the observed. The discussion of AI as an experimental companion is but brief and somewhat less reflective than the rest of the article; expanding this section to address human-machine or human-more-than-human collaboration and co-agency would strengthen this part of the manuscript. Overall, Sandu's article is conceptually refreshing, ambitious, innovative, and readable. It challenges the dominance of reductionist, control-oriented approaches and reframes experimentation as relational, ethical, and emergent. With minor revisions to foreground connections with Goethean science, complexity ethics, relational inquiry, and Indigenous Knowledge, the paper will make a strong interdisciplinary contribution to the philosophy of science, ethics, and complexity studies.

Strengths

- Clear, accessible, and engaging writing that communicates complex ideas effectively.
- Insightful reframing of experimentation as relational, ethical, and participatory.
- Resonates with posthumanist, complexity, feminist, and relational approaches.
- Timely engagement with variability, emergence, and far-from-equilibrium systems.

Suggestions for Improvement

1. Explicitly situate the methodology in the context of Goethean science (Wahl, 2005) to strengthen historical and philosophical grounding.
2. Integrate complexity ethics (Bai & Banack, 2006) to foreground ethical and epistemic stakes.
3. Engage with relational frameworks (Behrisch, 2021) to deepen the discussion of attunement and presence.
4. Reference Indigenous Knowledge systems (Kimmerer, 2013) to broaden the epistemic and ethical frame.
5. Expand the AI discussion to explore human-machine and human-more-than-human distributed cognition and agency in relational contexts.

Declarations

Potential competing interests: No potential competing interests to declare.