

Peer Review

Review of: "Multiscale Entropic Ethics: A Non-Scalar, Auditable Grammar for Decision-Making Under Irreversibility"

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The MEE framework displays theoretical sophistication and genuine conceptual novelty. Its procedural stratification—rights-based feasibility, plural evaluation, anti-manipulation safeguards, and ethical blindness reduction—marks a structural advance over traditional moral or governance models. The application to the Dakota Access Pipeline demonstrates predictive and analytical superiority compared to cost-benefit and environmental assessment paradigms. It integrates entropy as a procedural constraint, not as a moral metric, which is philosophically sound and operationally elegant.

At this stage, the principal challenges no longer concern factual precision but implementation feasibility and linguistic refinement. The operational translation of MEE into institutional or computational settings remains partially aspirational. The terminology “non-scalar” risks conceptual ambiguity. Adopting “**non-compensatory**” would improve semantic accuracy and align the paper with established literature in multi-criteria decision analysis. This term better captures the core principle that a severe failure in one dimension (e.g., a rights violation) cannot be mathematically offset or “compensated for” by gains in another (e.g., economic benefits), which is a central strength of the MEE framework.

Similarly, the paper could preempt future critiques about its complexity by briefly discussing an adaptive or modular derivative (tentatively “MEE-Lite”) for contexts requiring simplified procedural audits. This could be framed not as a fully developed model within this paper, but as a crucial avenue for future research, demonstrating the framework’s potential for broader applicability.

The framework successfully bridges thermodynamic irreversibility with normative accountability. MEE embodies a rigorous pluralism that avoids both utilitarian aggregation and procedural relativism. With minor linguistic adjustments and a clearer operational roadmap, it can become a reference model for ethics in planetary governance, AI alignment, and irreversible decision systems.

Suggested Refinements:

- Replace “non-scalar” with “non-compensatory” throughout the text to align terminology with contemporary literature on ethical metrics and decision theory.
- Introduce the concept of a secondary operational model (“MEE-Lite”) as a key avenue for future research to enhance institutional applicability and policy testing.
- Expand on the entropic audit methodology, specifying potential validation methods such as cross-scale entropy mapping or adversarial testing.
- Include a comparative table situating MEE vis-à-vis related frameworks (e.g., procedural pluralism, resilience ethics, adaptive governance).

Declarations

Potential competing interests: No potential competing interests to declare.