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Emergence as a Measurable System

🔥 Caleb Stacey　(Follow)　2 min read · Jun 24, 2025

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Conceptual Framework and Symbolic Mapping

By Caleb Stacey · 2025

———

For years, we've treated emergence as an intuitive phenomenon—the way complexity arises from simplicity, order from noise.

But what if it could be measured?

What if we could define a structure behind emergence—one that applies across biology, cosmology, cognition, and culture?

This is my proposed framework:

The Core Equation

$$\Omega = \lim_{n \to \infty} \left(\frac{\Delta S \cdot I + \Phi + D + \Sigma + \Gamma + \Lambda}{H} \right)$$

Where: Symbol, Conceptual Name, Scientific Analog

ΔS

Entropy Gradient

∇S—Thermodynamic tension

I

Mutual Information

Shannon signal / Information density

Φ

Latent Awareness

Integrated Information Theory (IIT)

D

Destructive Load

Collapse energy / systemic disruption

Σ

Recursive Frequency

Feedback loop rate (cycles per unit time)

Γ

Paradox Strain

Contradiction pressure / Self-conflict

Λ

Emergent Pressure

Unrealized potential / phase boundary

H

Memory Decay

Heat / Information loss over time

This equation models emergence folded into collapse—a recursive relationship where signal, tension, contradiction, and memory interact to shape new structure.

It represents:

• Why emergence doesn't happen in total chaos or perfect control

• Why most systems evolve just at the edge—between collapse and stability

• How entropy and memory define whether complexity survives or dissolves

It can be interpreted through:

• Physics (as entropy dynamics or quantum decoherence)

• Biology (as metabolic tension and adaptive intelligence)

• Psychology (as recursive awareness vs. overload)

• Civilization (as innovation under pressure)

Why I'm Publishing This Now

This post is timestamped to publicly establish authorship of the structure, symbol definitions, and conceptual framework.

It's not just philosophy. It's a testable, scalable, and translatable model.

If this resonates with your field—science, systems theory, AI, consciousness, thermodynamics—I'm open to dialogue.

Written by Caleb Stacey

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Independent researcher blending philosophy and science. Developing a recursive, testable theory of life as emergence. Always open to thoughtful feedback

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