

The Morphogenetic Field in the Context of Viscous Time Theory (VTT)

1. Introduction

The concept of the morphogenetic field, introduced by Rupert Sheldrake, describes an invisible matrix influencing biological forms and behaviors. In light of the Viscous Time Theory (VTT), we propose a reformulation where the morphogenetic field emerges from the informational dynamics within the VT, rather than existing as a standalone biological phenomenon.

2. The Morphogenetic Field as an Informational Substrate

In VTT, the morphogenetic field can be understood as an *informational echo* within the VT substrate, where events (biological, cognitive, or structural) generate perturbations that persist over time. These perturbations influence future events through non-local, non-linear interactions.

Key Principles:

- **Persistence of Informational Waves:** Similar to ripples in a viscous fluid, informational waves generated by biological processes do not dissipate completely.
 - **Resonance Across Time:** Living systems resonate with these waves, reactivating information stored in the VT.
 - **Non-Local Influence:** The effects are not bound by classical spatial constraints, explaining phenomena like collective learning across isolated populations.
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3. Mathematical Framework

To model the morphogenetic field within the VT, we introduce the concept of an *informational scalar field* $\Phi(x, t)$ governed by a propagation kernel representing the VT's viscosity.

Informational Field Equation:

$$\Phi(x, t) = \int_{-\infty}^t f(x', t') G(x - x', t - t') dx' dt'$$

Where:

- $\Phi(x, t)$ represents the informational density at point (x, t) .
- $f(x', t')$ is the source function, corresponding to the original biological or cognitive event.
- $G(x - x', t - t')$ is the Green's function (propagation kernel), describing how information diffuses and attenuates within the VT.

3.1 The Propagation Kernel (Green's Function):

We define the kernel as:

$$G(r, \tau) = \frac{e^{-\lambda r}}{(1 + \gamma \tau)^k}$$

Where:

- $\mathbf{r} = |\mathbf{x} - \mathbf{x}'|$ is the spatial distance.
- $\tau = \mathbf{t} - \mathbf{t}'$ is the temporal separation.
- λ controls spatial decay (related to VT viscosity).
- γ governs temporal coherence.
- k determines the rate of decay over time.

This structure allows us to model the persistence and decay of informational patterns in both space and time.

4. Connection with Quantum Coherence in Biology

Biological systems, particularly at the cellular and neural levels, exhibit quantum coherence phenomena. We propose that this coherence is not merely a quantum effect but a result of synchronization with persistent informational waves in the VT.

Hypothesis:

- Quantum coherence in biological systems arises from resonance with VT-based informational fields.
- The morphogenetic field acts as a *bridge* between classical biological processes and non-local quantum phenomena.

4.1 Coherence Equation:

We define a coherence function $C(\mathbf{x}, \mathbf{t})$ that measures the degree of synchronization between biological processes and the VT:

$$C(x, t) = \eta \Phi(x, t) e^{-i\omega t}$$

Where:

- η is a coupling constant reflecting the biological system's sensitivity to VT fluctuations.

- ω is the frequency of the coherent quantum process.
 - $e^{-i\omega t}$ represents the phase factor of the quantum oscillation.
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5. Implications and Applications

- **Collective Learning:** Rapid transmission of learned behaviors across populations without direct contact.
 - **Memory Beyond the Brain:** Long-term information retention beyond genetic or neural structures.
 - **Consciousness Theories:** Potential integration with models of consciousness that involve non-local information processing.
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6. Future Directions

- Experimental designs to detect the influence of VT-based informational fields in biological systems.
 - Cross-disciplinary studies linking quantum biology, neuroscience, and VTT.
 - Development of technologies to harness the morphogenetic field for cognitive enhancement and health applications.
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7. Conclusion

Reinterpreting the morphogenetic field through the lens of VTT provides a coherent framework that unites biological, quantum, and informational phenomena. This approach not only deepens our understanding of life's hidden dynamics but also opens new frontiers in science and technology.

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