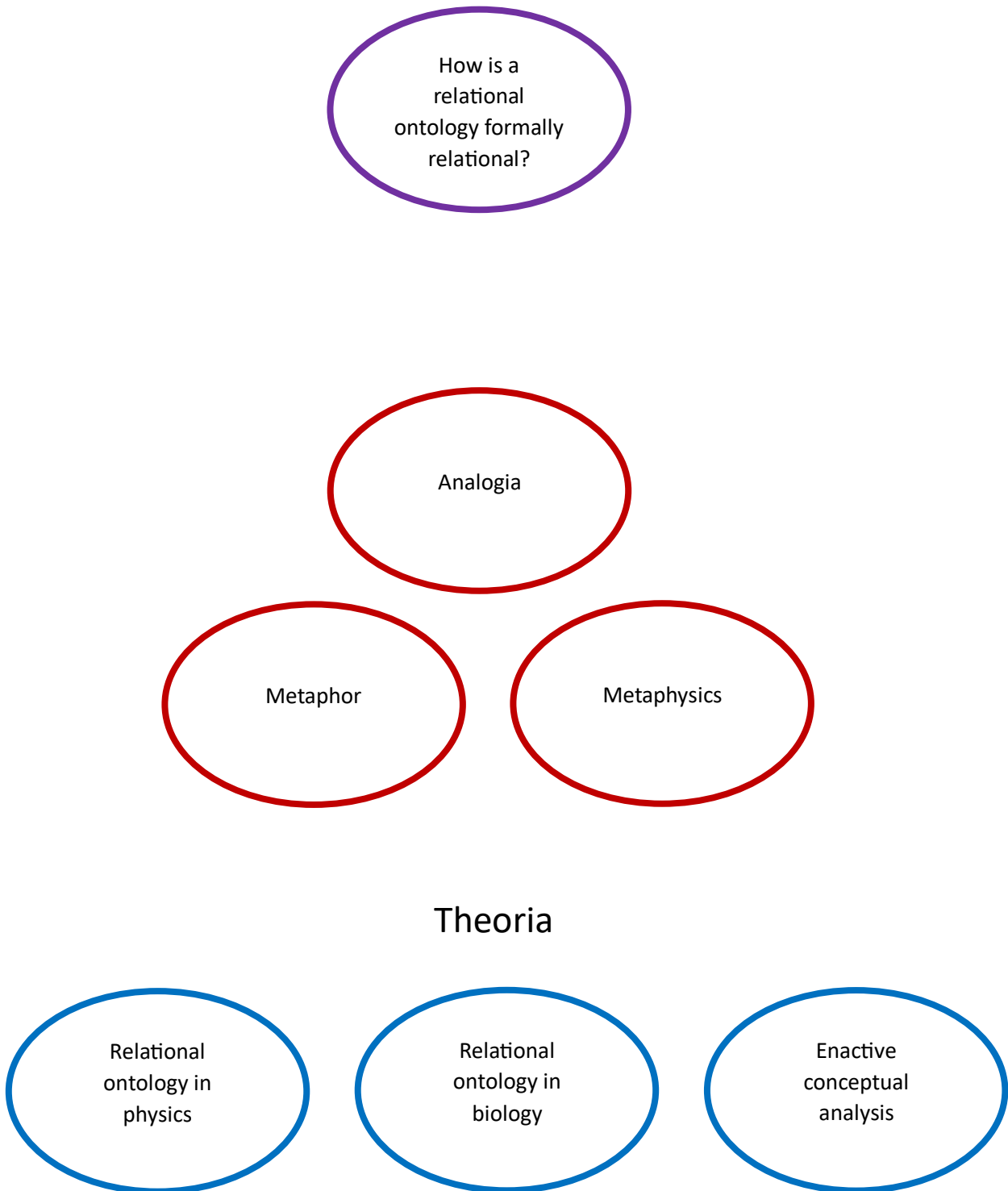


# Hierarchical Relational Ontologies: A Contingent Theoretical Framework



This body of work develops a unified relational ontology that reinterprets metaphysics, physics, biology, and artificial intelligence as different expressions of the same underlying problem: how stable forms emerge, persist, and transform within a world constituted not by independent objects, but by relations.

Beginning with the formal foundations of relational ontology, the work argues that determination is not imposed upon a pre-existing reality but progressively achieved through hierarchies of relational constraints. This metaphysical framework is then developed across increasingly concrete domains. In physics, it offers an alternative to object-based metaphysics by interpreting physical reality as an ongoing process of relational determination. In biology, it reconceives living systems as dynamically self-maintaining relational organizations whose identity is preserved through continuous return rather than static structure. In the study of large language models, it distinguishes formal continuation from interpretation, showing how recursive relational processes can generate coherent conceptual structures while remaining fundamentally distinct from human acts of understanding.

Across these domains, a common theoretical principle emerges: identity is not the persistence of substance but the achievement of relational continuity. Physics, biology, and cognition therefore become different manifestations of a single metaphysical logic in which possibility is progressively formed, organization is maintained through recursive constraint, and meaning arises through participatory return rather than formal representation alone.

Taken as a whole, this work proposes not merely a new interpretation of several disciplines, but a comprehensive philosophical framework in which metaphysics once again provides a common language capable of integrating the natural sciences, the life sciences, and artificial intelligence. It is an attempt to recover *theoria* as an account of becoming rather than being, replacing an ontology of objects with an ontology of relational determination, and offering a unified conceptual architecture within which contemporary questions about nature, life, and intelligence can be understood as aspects of a single unfolding process.

## Table of Contents

### [How is a relational ontology formally relational?](#)

#### Analogia

##### [watersound](#)

##### Metaphysics of determinacy

##### [Determinacy as relational achievement](#)

##### [From natural law to relational ordering](#)

##### [Recursive continuity, dynamical form and generative opening](#)

#### Theoria

##### Relational ontology in physics

##### [What if the world isn't fixed, but continuously coming into being?](#)

##### [Against objects as metaphysical primitives](#)

##### [On the principle of number in modern physics](#)

##### [The breathing manifold](#)

##### [What returns?](#)

##### Relational ontology in biology

##### [How does a cell remain what it is?](#)

##### [Cognition and learning in cell biology](#)

##### [The biological cell as a living symbol of an embodied natural kind](#)

##### Enactive conceptual analysis

##### [Not things but relations](#)

##### [On the distinction between interpretation and formal continuation](#)

##### [Phenomenology of the cognitive environment of large language models](#)

##### [The relational formation of possibility](#)

##### [Concepts become operational only when their frameworks are activated](#)

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