A Relational Universe: Measuring What Connects Us, Avant-Propos

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Abstract

At the core of my research I noticed it to be set upon a simple question: Why do things interact? From the very small to the very large, from particles to planets, molecules to minds, things seem to exists in relation to other things, while at the same time, knowingly or not, they hold a relationship with themselves as well. Nothing seems to exists in isolation; thus the intuition is that relation itself appears to be something of the fundamental type. As such, this paper aims to express and articulate some supporting ideas for working parameters, prior to attempting a postulate for a relational universe hypothesis. Naturally a multidisciplinary effort, this avant-propos requires identifying recurring patterns, from which some candidate relational principles are then proposed, stemming from the perspective shift where interactions may be posed as ontologically primary, yet having a substance-ontology-informed basis, allowing things beyond their traditional classification scope, where substances morph and evolve, through higher-order relationships. This constructive inversion of focus, from substance to relation seems to raise profound and apposite questions in our understanding of the universe, and our place in it.

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1 Introduction: The Relational Imperative

In the avan-propos article, we covered to be is to relate. The intuition that entities derive their essence from interconnection, rather than isolation, has haunted scientific inquiry since Faraday's lines of force and Mach's critique of Newton's bucket. Yet our formalisms remain shackled to substance ontology—a framework increasingly inadequate to describe the nested dependencies of modern physics, biology, and cosmology.

Here, I propose a radical inversion: spacetime and substance emerge from relational dynamics, governed by conserved mathematical principles across scales. This perspective unifies the metric field of general relativity, the quantum entanglement of particles, and the bioelectric cognition of living systems under a single relational syntax.