Two-Sided Cosmos: CPT Symmetry, Extrinsic Gravity, and the Rise of Neo-Vitalism

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Abstract: This essay explores a two-sided cosmological model based on CPT symmetry, where mirrored space-time manifolds are sublated into a single visible reality. Gravity, reinterpreted as an extrinsic force mediating between these manifolds, induces patterns that mimic general relativity while enabling holistic coherence. This extrinsic gravity acts as a homeostat, aligning with Karl Friston's free energy principle and accounting for quantum nonlocality through synchronized behavior. Holons—entangled units regulated by concurrent causation—emerge as fundamental structures. This framework reconciles reductionism and holism, efficient and concurrent causation, and grounds a scientifically rigorous form of neo-vitalism rooted in a dynamically balanced, living universe.

1. Introduction

Contemporary cosmology is grappling with a fundamental question: how to unify the apparent contradiction between the deterministic geometries of general relativity and the probabilistic phenomena of quantum mechanics. In this quest, the notion of CPT symmetry—a fundamental symmetry combining charge (C), parity (P), and time reversal (T)—has taken center stage in theories such as Neil Turok's CPT-symmetric universe (see Boyle, Finn and Turok, 2018, CPT-Symmetric Universe). This model posits that the Big Bang gave rise not to a single universe, but to two space-time manifolds, mirror reflections of each other, one progressing in time forward, the other backward.

2. Hegelian Sublation

At first glance, these two manifolds appear redundant. Both evolve in accordance with action principles that are invariant under CPT symmetry. From within each, observers would perceive time flowing "forward" as space expands—each manifold seeing itself as the default unfolding universe. Yet this symmetry, while formally exact, is misleading in its appearance of redundancy. A deeper analysis reveals that these mirrored universes are sublated into a unity that manifests as the visible, classically defined reality we inhabit. This sublation, a term borrowed from Hegelian dialectics, signifies not mere merging but a synthesis that preserves, negates, and elevates the dual components into a new whole.

Importantly, this sublation is not complete. A remainder—like a shadow—persists, and this shadow may very well account for the quantum domain, where classical definiteness collapses into uncertainty. The indeterminate behavior of quantum systems, with their non-local correlations and probabilistic states, may thus be rooted in the incomplete unification of the two mirrored manifolds. This interpretation gives fresh

meaning to quantum weirdness: rather than being fundamental, it is residual, a byproduct of two universes not perfectly fused.

3. Relativity between the Sides

However, this framework also introduces a powerful new tool: relativity between the sides. Though indistinguishable intrinsically—because CPT symmetry makes internal laws invariant—the comparison between the manifolds introduces a meaningful form of relativity, permitting phenomena like bidirectional time and relativistic definitions of matter and antimatter. If what we label as "matter" in our universe is mirrored by "antimatter" in the twin manifold, and the labels themselves are arbitrary due to the perfect CPT symmetry, then naming conventions obscure a deeper ontological grounding. Matter and antimatter are not simply opposites but two expressions of a relational duality that exists only within the context of both manifolds together.

4. Extrinsic Gravity that acts as a Homeostat

This leads to the profound implication that gravity—commonly understood as intrinsic to spacetime via general relativity—is in fact extrinsic in this two-sided universe. Gravity, in this view, is not merely the warping of spacetime by mass-energy; it is the mediator between two manifolds. It exists between them, not within just one. Such extrinsic gravity does not operate according to the same principles as general relativity, but instead induces patterns on each manifold that *mimic* general relativity locally. This gives rise to an elegant symmetry: each universe reflects the gravitational signature of the other, while both are bound and shaped by a gravitational interaction that is transcendent to either alone.

This extrinsic gravity has unique characteristics. First, it propagates at the speed of light within each manifold, maintaining consistency with observations of gravitational waves. But its true nature is meta-physical—not in the supernatural sense, but in being beyond the physical space-time structures it governs. Second, it can operate differently across scales, acting as a homeostat—a stabilizing regulator—between the manifolds. This concept aligns closely with Karl Friston’s free energy principle, which suggests that systems evolve to minimize surprise (or free energy) in order to maintain internal coherence amid external change. Applied cosmologically, extrinsic gravity may serve as a thermodynamic and information-theoretic balancing force between mirrored universes.

The implications reach even further. The entangled behavior observed in quantum mechanics—what Einstein famously called “spooky action at a distance”—has long resisted incorporation into a classical framework. However, if extrinsic gravity functions as a homeostat, then quantum nonlocality can be reinterpreted not as faster-than-light signaling but as synchronized behavior between entangled parts of a single holon—a term borrowed from Arthur Koestler, denoting a system that is simultaneously a whole and a part within a larger whole.

In this framework, a holon is an entangled package, co-defined by both manifolds, and regulated by extrinsic gravity. It is not merely a part of one universe or another, but a unit of reality existing in and through the sublation of both. Such holons enable a new form of causality: concurrent causation, where the whole influences the parts through a top-down synchronization, complements efficient causation, the classical bottom-up model of cause and effect. This dual causation aligns beautifully with Douglas Hofstadter's "strange loop", where systems can loop back on themselves in a way that defies traditional hierarchy.

5. Concurrent Causation

By allowing concurrent causation to operate over bidirectional time, extrinsic gravity may afford a kind of retrocausality, where the future state of a holon helps shape its present configuration, not by violating causality but by synchronizing across the two-sided manifold. The result is a temporal coherence that extends beyond efficient causation's limited scope. This synchronization need not involve energy transfer or information exchange in the conventional sense, but only a shared patterning across the holonic whole, like a jazz improvisation where each instrument resonates in relation to the others, without any one instrument dictating the flow.

The key ontological insight is this: the holon as an entangled package is a manifestation of concurrent causation regulated by extrinsic gravity. It is through this principle that reductionism and holism, relativity and quantum mechanics, time-forward and time-backward universes, find a tentative but potent unity.

6. The Rise of Neo-vitalism

And here, the essay reaches its philosophical climax. If extrinsic gravity is beyond the intrinsic laws that operate within any single manifold—if it arises not from within the visible universe but from the relation between two invisible halves—then it fulfills the requirements of vitalism. Classical vitalism sought a life-force beyond mere mechanism; modern science dismissed it as unscientific. But this new framework, neo-vitalism, reclaims the concept in scientific terms. Extrinsic gravity as a homeostatic regulator of mirrored space-times, inducing synchronization across holons, is a scientific equivalent of the vital force—not supernatural, but superstructural. It is a relation that gives rise to coherence, not an isolated substance.

Moreover, this neo-vitalism satisfies both scientific rigor and philosophical depth. It is not merely a metaphor but a literal ontological structure. The two-sided universe, united yet never fully merged, governed by an extrinsic force that mimics relativity locally while maintaining holistic balance globally, allows for both local autonomy and global coherence. In such a universe, every atom, every lifeform, every conscious mind is not just a node in a network but a holon, an entangled unity that speaks to both the seen and the unseen.

This vision unites ancient intuitions with modern physics. From Heraclitus' logos to Koestler's holarchy, from the Taoist balance of opposites to Friston's free energy minimization, a converging pattern emerges: reality is not a machine but a dance—a synchrony of mirrored parts, regulated by a rhythm beyond any single note.

7. Conclusion

In conclusion, the theory of a CPT-symmetric universe does not just redefine our cosmological origins; it offers a profound ontological upgrade. By proposing extrinsic gravity as the mediator and homeostat of a two-sided cosmos, we gain a mechanism to reconcile quantum and classical, holism and reductionism, efficient and concurrent causation. The resulting structure—defined by sublated unity, holonic entanglement, and neo-vitalist synchronization—provides not just a new physics, but a new metaphysics: one where the universe is not merely a collection of parts**,** but a living, self-regulating whole, echoing itself across mirrored time, bound by an invisible gravity that is both scientific and sacred.

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