

Gravity as Sublation: The Dialectic of Two Manifolds and the Unifying Principle in Nature

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Abstract: This essay proposes that the observed space-time fabric is not an ontologically primary continuum but a synthesis—or *sublation*—of two interpenetrating manifolds, as implied by CPT symmetry and action-based models in physics. This conception reveals gravity as an *extrinsic* unifying principle that mediates between the manifolds. This ontological insight echoes themes in Hegel's *Philosophy of Nature*, where gravity serves as the negation of abstract spatial multiplicity; in Koestler's *The Ghost in the Machine*, where evolution and consciousness imply hierarchical integration; and in Karl Ernst von Baer's embryological theories, where form arises from a centripetal organizing force. Together, these perspectives suggest that gravity is not merely a force among others but a fundamental principle of synthesis in both physical and biological realms.

Keywords: Centripetal Development, CPT Symmetry, Extrinsic Gravity, Formative Forces, Holon, Holarchy, Sublation, Two-sided.

1. The Space-Time Fabric as a Dialectical Sublation

Modern physics conceives the fabric of space-time as a unified four-dimensional manifold that hosts the dynamics of matter and energy. However, deeper theoretical principles—such as CPT symmetry and action-based formulations—suggest that this manifold may be *not fundamental*, but the result of a *sublation* (in Hegel's sense: *Aufhebung*) of two mirrored manifolds (e.g., Smith 2021). Each manifold, while complete in its own right, is distinguished by its time-orientation, spin structure, or boundary conditions (Boyle, Finn and Turok, 2018). From the perspective of CPT-invariant action principles, the laws that govern each manifold are internally symmetric, but the conjunction of both creates the conditions for observable asymmetry, individuality, and agency.

In such a picture, gravity is not simply an internal property of a single manifold. Rather, it emerges as an *extrinsic* interaction—a kind of coupling—between the two. This reinterpretation parallels how interference patterns in quantum systems emerge from the superposition of wavefunctions: the resulting 'fabric' is not the primitive entity, but a pattern formed by deeper, opposing structures. The space-time continuum is the standing wave between them.

This ontological structure implies that gravity, far from being merely a force within the manifold, may serve as the *principle of unification* that synthesizes the two. It is not reducible to geometry, nor purely internal to either side of the CPT mirror. Rather, it pulls across the boundary, bending each manifold toward a mutual horizon.

2. Hegel's Dialectic of Nature: Gravity as Sublation of Space and Time

Hegel's *Philosophy of Nature* prefigures this vision in a remarkable way. For Georg W. F. Hegel (1770-1831), the category of *space* represents the externality and indifference of being: pure multiplicity without inherent order. Time, by contrast, is the internalization of space—its contradiction, movement, and dissolution. Gravity emerges, in Hegel's account, as the *negation of abstract space*, a principle of *inwardness* that gathers multiplicity into singularity. It is not simply a force among others, but the “ideal being” that draws the multiplicity of space into the unity of mass. According to Stone (2000), however, Hegel's sees gravity as a dual subjection, as the behavior of mass-carrying bodies to attract one another, and eventually to repel to also maintain individualization; i.e., Hegel's negation in this case is his “second negation.” In effect, gravity and inertia must balance, which is the act of sublation beyond simple attraction. Hence, Hegel's gravity is an extrinsic gravity that acts as a homeostat to balance the two-sided, performing the function of sublation.

Crucially, Hegel sees gravity as *not reducible to mechanism*. It is the transition point from pure geometry to organismic nature. Gravity is thus *not* just a property of objects but the very principle that gives rise to objecthood by differentiating spatial relations. This directly echoes the idea that the observed fabric of space-time results from a deeper dialectic between opposing manifolds: gravity is the second negation that allows individuation, curvature, and history.

Moreover, Hegel's sublation of time into space (and vice versa) implies that each is incomplete on its own. This fits the two-manifold picture precisely. Neither manifold can generate observed complexity alone; their interaction, mediated by gravity, constitutes a whole. Thus, Hegel's system offers a metaphysical structure in which gravity is not just physical but ontological—an intrinsic drive toward unity that emerges through contradiction.

3. Koestler's Hierarchical Integration: Gravity in the Holarchy

Koestler (1967) develops a biological and psychological extension of this dialectical view. He critiques the mechanistic and reductionist view of the brain, proposing instead a *holarchy*—a hierarchy of self-regulating systems (or *holons*) where each level integrates but transcends the lower one. Consciousness, in this view, arises not from additive parts but from integrative tensions across hierarchical levels.

Koestler's notion of regression in evolution—where higher levels can fail to inhibit or harmonize lower ones—parallels the failure of unification across domains. Yet when integration succeeds, there emerges a coherent self, a living whole. This echoes the function of gravity in the dual-manifold cosmological model: it is the extrinsic principle that enables synthesis across boundaries, whether physical or psychological.

Without mentioning gravity by name, Koestler (1967, p. 61-63) does describe this very “attractive force” representing the integrative tendency of the larger whole that opposes

inertia which represents the quasi-independent property of the part. Therefore, Koestler couples inertia and gravitation within the broader holarchy, in a way analogous to Einstein's equivalence principle. Koestler also refers to Newton's Third Law of Motion, stating, "to every action there is an equal and opposite reaction." These references are enough to translate Koestler's holarchy into cosmological terms, each manifold becomes a holon: internally self-regulating but open to integration. The gravitational field is then the mediating holarchy—an ordering force that binds each manifold not just spatially, but developmentally. Like the centripetal force in a living system, gravity draws disparate structures toward coherence, creating the conditions for both stability and transformation.

Thus, Koestler's insight offers a bio-ontological analogy to the cosmological model: gravity is the "ghost" in the machine of space-time—a unifying presence not fully contained by mechanistic laws, but essential for emergent wholeness.

4. Von Baer and the Principle of Formative Forces

Karl Ernst von Baer (1792-1876), the pioneering embryologist, rejected the mechanistic notion that life could be explained by Newtonian forces alone. Instead, he argued for *formative forces* that drive development toward increasing complexity and individuation. His famous law—that organisms develop from general to specific forms—implies a centripetal process, one where structure is not imposed from without but unfolds through an inner necessity (cf., Lenoir 1982).

This view resonates deeply with the conception of gravity as an extrinsic principle of unification. In von Baer's account, biological development is not simply a result of internal genetic programs, but of a teleological force that draws matter toward higher organization. Gravity, in our two-manifold model, acts in an analogous way: not as a force that pushes or pulls in space, but as a teleological curvature that draws matter and form into coherence across the mirrored domains.

Von Baer's "centripetal" development suggests that each part is drawn inward to participate in a larger whole. Von Baer actually characterized the centripetal force in terms analogous to gravitational force (Lenoir 1982, p. 230). This inward pull is again reminiscent of Hegel's gravity, Koestler's holarchy, and the dual-manifold model. The implication is that in biology, as in cosmology, form and individuation require a unifying attractor—something like gravity—that is not reducible to mere interaction, but rather expresses an ordering principle latent in the whole.

5. Toward a New Ontology of Gravity

What emerges from these parallels is an ontological rethinking of gravity itself. In the standard model, gravity is one of the four fundamental interactions—weak compared to the electromagnetic or nuclear forces, yet universal. In the dual-manifold view, however, gravity is *not one force among many* but the *sublating principle*—the mediator that

enables unity from opposites. This mirrors the structure of dialectical logic, where contradiction is not error but the precondition for higher synthesis.

The sublation of two space-time manifolds implies that matter, motion, and even consciousness are *emergent* from a more basic duality. This view not only aligns with quantum interpretations (such as CPT invariance and entanglement across temporal boundaries), but also resonates with philosophical and biological insights that have long resisted reductionism.

Hegel provides the conceptual machinery: contradiction, negation, and synthesis as ontological structures. Koestler shows how these manifests in the evolution of living systems, where higher-order coherence requires an integrative force. Von Baer grounds this vision in developmental biology, emphasizing form as an emergent property of inward-directed processes.

Thus, gravity may be understood not as a force *within* nature but as the *principle of nature itself*—the very capacity of reality to bring opposites into ordered relation. It is not reducible to geometry, mass, or even curvature; it is the *relational dynamic* that allows those properties to emerge.

6. Conclusion: Gravity as the Mirror of Being

Davies (2004, p. 133-135) examines gravity not merely as a local force of attraction but as a profound driver of cosmic order. Unlike thermodynamic forces, which typically promote disorder through entropy, gravity fosters large-scale organization—structuring galaxies, stabilizing planetary orbits, and enabling the conditions for complexity to arise. This anti-thermodynamic behavior positions gravity as a counterbalancing force against entropy, suggesting that it may function as a homeostat, a mechanism that sustains equilibrium at cosmic scales. This puts Davies in the same company as Hegel, Koestler and von Baer, as scholars that found gravity with extrinsic capabilities that support organization.

Even Isaac Newton's interpretation of gravity is enigmatic according to Connolly (2024): a mathematically exact phenomenon acting without mechanical mediation, reflecting a fusion of empirical rigor and occult insight, and hinting at a causal agency beyond the confines of mechanism. "Enigmatic" in this sense means something extrinsic to the normal happenings beyond space-time, exactly what Davies and the others were hinting at.

When we speak of space-time, we often assume it is singular and given. But a deeper reading—both physical and philosophical—suggests it may be a *mirror-play* of two fundamental realities. The observable cosmos is the resonance between two worlds, each complete yet incomplete, drawn together by a gravity that neither originates nor contains.

Hegel intuited this as the sublation of space by gravity. Koestler saw it in the holonic organization of life and mind. Von Baer discerned it in the centripetal motion of embryonic form. Together, these thinkers point to a vision of gravity not as a blind force, but as the echo of unity—an invisible attractor that draws both cosmos and consciousness into coherent form.

In this vision, gravity is not merely *in* the universe. It *is* the condition that allows a universe to be seen at all.

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