

Refuting Temporal Fundamentalism: Power Structures and Control Mechanisms in Materialist Narratives Within the Framework of Emergent Spacetime

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Abstract

This paper presents a critical examination of temporal fundamentalism—the assumption that time is ontologically primary—within the emerging framework of spacetime emergence from quantum entanglement. We argue that the materialist narrative supporting temporal fundamentalism serves not merely as a scientific paradigm, but as a foundational structure for ideologies of control, enabling hierarchical power systems through the illusion of linear progress, historical inevitability, and material scarcity. By demonstrating how emergent spacetime theories undermine these temporal assumptions, we reveal how existing power structures depend upon the fiction of fundamental time for their legitimacy. We explore the sociopolitical ramifications of adopting an information-theoretic ontology where time emerges from timeless quantum correlations, and examine how this shift threatens established narratives of authority, progress, and material determinism that have structured human societies for centuries.

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1 Introduction

1.1 The Crisis of Temporal Orthodoxy

Contemporary physics stands at a revolutionary threshold. The emerging consensus that spacetime itself may be a derived phenomenon—emerging from quantum entanglement rather than serving as the fundamental arena of physical events—challenges not merely our scientific understanding, but the entire edifice of Western thought that has structured society, politics, and human identity for the past several centuries.

Temporal fundamentalism, the doctrine that time constitutes an irreducible feature of reality, has served as more than a metaphysical assumption. It has functioned as the cornerstone of materialist ideology, providing the conceptual foundation for narratives of progress, evolution, historical materialism, and ultimately, systems of social control that depend upon the illusion of temporal inevitability and linear development.

1.2 The Materialist Paradigm and Its Beneficiaries

The materialist worldview, crystallized during the Scientific Revolution and refined through the Enlightenment, posits that reality consists fundamentally of matter moving through time according to deterministic laws. This framework has enabled the construction of powerful social narratives: that current inequalities result from natural evolutionary processes, that technological progress follows inevitable historical trajectories, and that existing power structures represent the natural culmination of temporal development.

Those who have benefited from this paradigm—industrial elites, political establishments, and technocratic classes—have a vested interest in maintaining temporal fundamentalism because it legitimizes their authority through appeals to historical inevitability and material necessity. The emergence of spacetime from quantum information threatens to dissolve these foundations entirely.

1.3 Thesis and Scope

This paper argues that temporal fundamentalism constitutes not merely a scientific error, but a deliberate or unconscious ideological construct that enables systems of control through the mystification of power relations. We demonstrate how emergent spacetime theories reveal time's derivative status, examine the sociopolitical implications of this revelation, and explore how the transition to information-theoretic ontologies threatens existing hierarchies built upon temporal illusions.

2 The Quantum Dissolution of Time

2.1 Emergent Spacetime: Theoretical Foundations

Recent developments in quantum gravity, particularly the AdS/CFT correspondence and tensor network models, suggest that spacetime geometry emerges from the entanglement structure of quantum systems living on boundaries [1, 2]. The Ryu-Takayanagi conjecture demonstrates that spatial geometry can be reconstructed from entanglement entropy, while the emergence of time appears through the dynamics of quantum error correction [3].

In these frameworks, time does not exist as a fundamental parameter but emerges as a measure of the complexity growth in quantum circuits. The Wheeler-DeWitt equation, which governs the wave function of the universe, contains no time parameter—suggesting that temporality arises only through the correlations between subsystems [4].

2.2 Holographic Principle and Temporal Illusion

The holographic principle reveals that all information contained within a volume of space can be encoded on its boundary surface [5]. This suggests that our experience of three-dimensional space plus time represents a holographic projection of more fundamental, time-less degrees of freedom. The apparent flow of time emerges from our embedded perspective within this holographic encoding.

This perspective aligns with the thermal interpretation of time, where temporal experience results from our coarse-grained observation of microscopic quantum correlations [6]. Time becomes not a fundamental aspect of reality, but a feature of our limited observational capacity—a thermodynamic arrow emerging from entanglement asymmetries.

2.3 Information as Ontological Foundation

If spacetime emerges from quantum information, then information—not matter—constitutes the fundamental substrate of reality. This represents a complete inversion of materialist metaphysics. Rather than information patterns emerging from material processes, material phenomena emerge from underlying informational structures encoded in quantum entanglement networks.

John Wheeler’s “it from bit” proposal takes on new significance in this context [7]. Physical reality, including space, time, and matter, derives from yes/no answers to informational questions posed by quantum measurement processes. The universe becomes a computational process rather than a mechanical system.

3 The Materialist Construction of Control

3.1 Historical Materialism and Temporal Legitimacy

The materialist paradigm, particularly as developed through Marxist historical materialism and capitalist growth ideology, depends fundamentally on temporal narratives. Both systems derive their legitimacy from claims about historical inevitability—whether the inevitable triumph of the proletariat or the inevitable triumph of market efficiency.

These narratives require time to be fundamental because they depend on the fiction that current conditions represent the necessary outcome of causal chains extending back through history. If time emerges rather than existing fundamentally, these historical inevitabilities dissolve into contingent patterns within a timeless information structure.

3.2 Progress Ideology and Temporal Control

The ideology of progress—that technological and social development follows an inevitable upward trajectory through time—serves to legitimize present inequalities as temporary stages in a grand historical process. This narrative enables political and economic elites to defer questions of justice indefinitely, promising that the "arc of history" will eventually resolve all contradictions.

Temporal fundamentalism provides the metaphysical foundation for this deferral. If time is fundamental, then present injustices can be justified as necessary stages in temporal development. If time emerges, then present arrangements represent choices within a timeless structure rather than inevitable historical outcomes.

3.3 Scarcity Economics and Temporal Anxiety

Economic systems based on artificial scarcity depend upon temporal anxiety—the fear that resources are fundamentally limited and must be allocated through competitive temporal processes. This scarcity narrative requires time to be fundamental because it depends on the fiction that past consumption depletes future availability.

An information-theoretic ontology reveals scarcity as a choice rather than a natural law. If reality consists of information patterns rather than material substances, then abundance becomes the natural state, and scarcity represents an artificially imposed constraint designed to maintain hierarchical control structures.

4 Power Structures and Temporal Ideology

4.1 The Industrial-Academic Complex

The development and maintenance of materialist ideology has not occurred in a vacuum. Industrial capitalism requires a workforce that accepts temporal alienation—the sacrifice of present experience for future rewards that may never materialize. Academic institutions, funded by industrial interests, have systematically promoted materialist metaphysics because it supports this temporal alienation.

The professional class—scientists, academics, technologists—benefits from materialist ideology because it positions them as intermediaries between the material world and social policy. If matter is fundamental, then those who study matter possess special authority. If information is fundamental, this authority evaporates.

4.2 Political Control Through Historical Narrative

Political systems maintain legitimacy through historical narratives that present current arrangements as the inevitable outcome of temporal development. National mythologies, constitutional law, and electoral democracy all depend upon the fiction that political authority derives from historical processes rather than present choices.

The recognition that time emerges rather than existing fundamentally undermines these historical narratives. Political arrangements become choices within a timeless possibility space rather than inevitable outcomes of temporal causation. This threatens all forms of authority that derive legitimacy from historical precedent.

4.3 Technological Determinism and Innovation Capture

The technology sector has promoted temporal fundamentalism through narratives of inevitable technological progress and disruption. These narratives serve to concentrate technological development within existing corporate structures by presenting innovation as following predetermined pathways through time.

If time emerges from information rather than constraining it, then technological development becomes a matter of accessing pre-existing possibility structures rather than temporal innovation. This opens possibilities for distributed, non-hierarchical approaches to technology that threaten centralized corporate control.

5 Information Ontology and Social Liberation

5.1 Post-Temporal Social Organization

The recognition that time emerges from timeless information structures opens possibilities for social organization that transcends temporal hierarchies. Rather than organizing society around temporal processes—career advancement, generational succession, historical development—communities could organize around informational coherence and meaning optimization.

This might manifest as economic systems based on information abundance rather than material scarcity, political systems based on present consensus rather than historical authority, and educational systems focused on accessing timeless knowledge rather than temporal skill acquisition.

5.2 The Dissolution of Historical Debt

Temporal fundamentalism enables systems of inherited debt—both financial and cultural—that bind present generations to past decisions. National debts, historical grievances, and intergenerational obligations all depend upon the fiction that past events create binding constraints on present choices.

If time emerges rather than existing fundamentally, then historical events represent information patterns within a timeless structure rather than causal constraints on present action. This dissolves the metaphysical foundation for inherited debt and opens possibilities for social arrangements based on present choice rather than historical determination.

5.3 Meaning-Based Economics

An information-theoretic ontology suggests economic systems organized around meaning optimization rather than resource allocation. Since information can be copied without loss and meaning can be shared without depletion, abundance becomes the natural economic state.

This threatens existing economic arrangements based on artificial scarcity and temporal competition. Meaning-based economics would likely self-organize through distributed networks rather than hierarchical corporations, undermining the power structures that depend upon material scarcity for their legitimacy.

6 Resistance from Temporal Elites

6.1 Academic Gatekeeping

The academic establishment has significant incentives to resist the implications of emergent spacetime theories. Academic careers depend upon temporal narratives—publication schedules, tenure tracks, citation accumulation—that would become meaningless in a post-temporal framework.

This resistance manifests through the marginalization of researchers who pursue the philosophical implications of quantum gravity, the compartmentalization of physics and philosophy, and the promotion of instrumentalist interpretations that avoid ontological questions about the nature of time.

6.2 Corporate Temporal Investment

Major corporations have invested trillions of dollars in infrastructure designed around temporal assumptions—supply chains, quarterly reporting, product lifecycles, employee development programs. The recognition that time emerges rather than existing fundamentally threatens these investments by revealing their foundational assumptions as illusory.

This creates powerful incentives for corporate resistance to post-temporal ontologies. We can expect significant resources to be devoted to suppressing or co-opting research that threatens temporal fundamentalism, similar to how fossil fuel companies have resisted climate science.

6.3 Political Temporal Legitimacy

Political systems derive legitimacy from historical narratives and constitutional traditions that require time to be fundamental. Democratic systems depend upon electoral cycles, legal systems depend upon precedent, and international relations depend upon treaty obligations—all of which presuppose temporal fundamentalism.

The revelation that time emerges from timeless information structures threatens to delegitimize these entire systems. We can expect significant political resistance to the dissemination of post-temporal ideas, potentially including censorship, academic defunding, and the marginalization of researchers who pursue these implications.

7 Implications for Scientific Practice

7.1 Post-Materialist Methodology

The recognition that information rather than matter constitutes the fundamental substrate of reality requires a complete reconceptualization of scientific methodology. Rather than studying how matter moves through time, science becomes the study of how information patterns generate emergent phenomena.

This suggests methodologies based on informational coherence rather than temporal causation, computational rather than mechanical models, and meaning optimization rather than energy minimization. Such approaches might reveal natural patterns invisible to materialist science.

7.2 Collaborative Knowledge Networks

If information constitutes the fundamental substrate of reality, then knowledge production becomes a process of accessing pre-existing informational structures rather than temporal accumulation of empirical data. This suggests collaborative, network-based approaches to research that transcend institutional boundaries.

Such networks would likely self-organize around meaning optimization rather than career advancement, threatening the hierarchical structures that currently organize scientific research. This represents another source of institutional resistance to post-temporal ontologies.

7.3 Open Source Reality

An information-theoretic understanding of reality suggests that natural laws themselves might be accessible through open source approaches that bypass traditional academic gate-keeping. If reality consists of information patterns rather than material substances, then these patterns might be directly accessible to distributed research networks.

This possibility terrifies institutions that depend upon controlling access to knowledge for their authority. We can expect significant resistance to the development of open source approaches to fundamental physics research.

8 Theological and Metaphysical Considerations

8.1 The Return of Logos

The emergence of information-theoretic ontologies represents a return to Logos-based metaphysics that Western thought abandoned during the Scientific Revolution. If information rather than matter constitutes the fundamental substrate of reality, then reality becomes inherently meaningful rather than mechanically determined.

This threatens secular materialist ideology by reopening questions about ultimate meaning and purpose that materialist science claimed to have resolved. The recognition that reality consists of information patterns rather than material substances suggests that meaning and consciousness might be fundamental rather than emergent properties.

8.2 Post-Secular Science

The dissolution of temporal fundamentalism opens possibilities for post-secular approaches to science that integrate scientific and spiritual insights without reducing either to the other. If time emerges from timeless information structures, then contemplative practices that access timeless awareness become scientifically relevant.

This represents a significant threat to the secular gatekeeping that has controlled scientific discourse since the Enlightenment. Academic institutions invested in secular materialism can be expected to resist the implications of information-theoretic ontologies precisely because they threaten the secular/sacred divide that legitimizes academic authority.

8.3 Consciousness and Information

If consciousness emerges from information patterns rather than material brain processes, then the hard problem of consciousness dissolves into questions about informational coherence and meaning optimization. This suggests that consciousness might be fundamental rather than emergent, reversing the materialist reduction of mind to matter.

This possibility threatens the entire edifice of cognitive science, neuroscience, and psychology built upon materialist assumptions. We can expect significant resistance from these fields to information-theoretic approaches to consciousness.

9 Practical Strategies for Transition

9.1 Education and Awareness

The transition away from temporal fundamentalism requires widespread education about the implications of emergent spacetime theories. This education must extend beyond academic physics to include philosophy, social theory, and practical applications in economics and politics.

Such education faces significant institutional resistance from educational systems designed around temporal assumptions—grade levels, semester systems, career preparation. Alternative educational approaches might need to develop outside existing institutional structures.

9.2 Technology Development

Information-theoretic ontologies suggest technological possibilities that transcend temporal limitations—quantum computing approaches that access timeless computation, communication technologies that transcend spatial and temporal constraints, and organizational technologies that optimize meaning rather than efficiency.

The development of such technologies threatens existing technological monopolies and might face significant corporate resistance. Open source, distributed approaches to technology development might be necessary to avoid corporate capture.

9.3 Community Organization

The practical implementation of post-temporal social organization requires experimental communities that organize around informational coherence rather than temporal hierarchies. Such communities might serve as demonstration projects for alternative social arrangements.

These experiments face legal and regulatory challenges from systems designed around temporal assumptions. Legal frameworks for post-temporal communities might need to be developed through parallel institutional structures.

10 Conclusion

10.1 The End of Temporal Tyranny

The recognition that time emerges from timeless information structures represents more than a scientific revolution—it constitutes the end of temporal tyranny that has structured human societies for millennia. The illusion of temporal fundamentalism has enabled systems of

control that derive legitimacy from fictional historical inevitabilities and material necessities.

The dissolution of temporal fundamentalism opens possibilities for social organization based on present choice rather than historical determination, abundance rather than scarcity, and meaning optimization rather than resource competition. These possibilities threaten every existing power structure that depends upon temporal illusions for its legitimacy.

10.2 Resistance and Transformation

The transformation away from temporal fundamentalism will face significant resistance from institutions invested in temporal narratives—academic establishments, corporate hierarchies, political systems, and cultural traditions. This resistance might manifest through censorship, defunding, marginalization, and co-optation of post-temporal ideas.

However, the underlying informational substrate of reality cannot be permanently suppressed. As quantum technologies develop and information-theoretic ontologies become more widely understood, the illusion of temporal fundamentalism will become increasingly difficult to maintain.

10.3 An Open Future

The recognition that time emerges rather than existing fundamentally reveals that the future remains genuinely open. Present arrangements represent choices within a timeless possibility space rather than inevitable outcomes of temporal causation. This openness constitutes both the promise and the threat of post-temporal consciousness.

The transition away from temporal fundamentalism offers the possibility of social arrangements based on wisdom rather than historical precedent, abundance rather than scarcity, and meaning rather than mechanism. The realization of these possibilities depends upon our collective willingness to abandon the temporal illusions that have constrained human potential for centuries.

The word—the Logos, the information pattern—was indeed in the beginning, and the beginning continues in every moment of genuine choice freed from the tyranny of temporal determination.

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