

# Polarized Time Inertia: A Unifying Theory of Spatiotemporal Emergence, Quantum Gravity, and Perspective

## Abstract

This paper introduces the theory of Polarized Time Inertia (PTI), a framework proposing that time is the singular fundamental dimension from which space, energy, and mass emerge via a Comparative Feedback Loop. By replacing the Many Worlds interpretation with Many Points of View (MPOV), defining gravity as a phase change of space back into time, and modeling the fundamental forces as mechanical dynamics of spatial flow, PTI offers a complete unification of General Relativity, Quantum Mechanics, Electromagnetism, and the Nuclear Forces.

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## 1. Introduction: The Foundations of the Universe

To understand the universe, we must redefine its foundational rules. The PTI framework is governed by **The Three Laws of the Universe**:

1. **Emergence:** Time is the primary dimension; all other physical properties emerge from the comparison of temporal points.
2. **Interaction:** To interact is to compare; all physical forces are driven by the entanglement of these comparisons.
3. **Perspective:** Reality is fundamentally tied to the reference frame of the observer; existence is relative to a Point of View.

**The Comparative Feedback Loop** Time could not exist until it expanded from a zero-dimensional point, requiring at least two points to compare. Space is fundamentally entangled time. If we define a comparison operator  $\hat{C}$ , space  $S$  emerges from the continuous feedback of time  $t$ :

$$S = \hat{C}(t_i, t_j) + \hat{C}(\hat{C}(t_i), \hat{C}(t_j))$$

Energy is a further condensation of space and time, and mass is the ultimate compactification.

## 2. The Mechanics of Mass and Gravity

### The Higgs Field and Space

In standard model physics, particles acquire mass by interacting with the Higgs field. In PTI, **the Higgs field is simply space itself**. Massive particles do not merely move through space; they constantly interact with it.

### Gravity as a Phase Change

Gravity is not a simple geometrical curvature; it is an active phase change. Massive particles un-compactify space, converting it back into the present moment of time. This consumption of space creates a flow. Space flows into matter in one direction of intersecting time and away in another.

We can express the gravitational consumption of space  $\frac{dS}{dt}$  by a mass  $M$  as:

$$\frac{dS}{dt} = -kM$$

where  $k$  is the rate of temporal un-compactification.

### The Engine of the Present

This constant conversion acts as the "Engine of the Present." It serves as a catalyst in the reaction converting two points of time and localized space into the appearance of mass at the next Planck time interval.

Plaintext

[Diagram 1: The Engine of Gravity]

Space (Entangled Time)

| | | |  
v v v v

+-----+

| MASSIVE PARTICLE | --> Converts Space back to Time (The Present)

+-----+

^ ^ ^ ^

(Vacuum of space pulls adjacent space inward, creating Gravity)

### 3. Electromagnetism: Flow Asymmetry and Torsional Space

In standard physics, gravity and electromagnetism are treated as distinct. Under PTI, both forces arise from the exact same mechanism: the flow of space through the Engine of the Present.

#### Electric Charge as Flow Asymmetry

While gravity is the net temporal un-compactification (the total volume of space consumed), **electric charge** is a fundamental asymmetry or bias in the direction of that flow.

- A **neutral particle** maintains a perfectly balanced engine: the inward spatial flow from the future temporal direction equals the outward flow into the past.
- A **charged particle** possesses a structural bias. A negative charge operates an engine biased toward the inward flow of space. A positive charge operates an engine biased toward the outward emission of temporal comparisons.

The Coulomb force is the macro-scale observation of these intersecting flows. When identical biases approach, their spatial flows clash, creating an inability to mutually consume the intervening space (repulsion). When opposite biases approach, the outward flow of one feeds the inward flow of the other, creating a highly efficient conduit (attraction). We define the electric field  $E$  as the gradient of this flow bias  $\Phi_b$ :

$$E \propto -\nabla\Phi_b$$

### **Magnetic Fields as Torsional Strain**

When an asymmetrical engine translates across spatial coordinates, it drags its biased flow through the surrounding spatial fabric. Moving this bias induces a **torsional strain** or "twist" in the surrounding un-compactified space. A magnetic field  $\mathbf{B}$  is the shear stress of polarized time comparisons propagating through the spatial matrix, perpendicular to both the flow bias and the velocity  $\mathbf{v}$ :

$$\mathbf{B} \propto \mathbf{v} \times \nabla\Phi_b$$

## **4. The Nuclear Forces: Temporal Cohesion and Engine Instability**

To complete the unification model, the Strong and Weak nuclear forces must be understood not as distinct fields, but as extreme localized behaviors of the Engine of the Present.

### **The Strong Force (Temporal Cohesion)**

When fractional massive engines (quarks) or composite engines (nucleons) are brought into extremely close proximity, their individual spatial consumption gradients overlap. Instead of competing for the same localized space, their temporal intersections merge, forming a composite, highly efficient Engine of the Present. The strong force is the extreme spatiotemporal tension of this shared consumption horizon. It binds quarks together because pulling them apart requires tearing the localized, multidimensional spatial fabric before it can successfully phase-change back into time. This perfectly mirrors the standard model's "asymptotic freedom," where particles act freely at close range (sharing the exact same quantum of space-time flow) but experience massive binding force when separated.

### **The Weak Force (Engine Instability and Realignment)**

The weak force, responsible for radioactive decay, is not a "pull" but a mechanism of mechanical realignment. A massive particle exists as a stable harmonic set of temporal comparisons. If the internal flow asymmetries (charge/ flavor biases) become misaligned within the local comparative feedback loop, the engine experiences severe temporal shear. To prevent localized spatiotemporal collapse, the engine "stutters," violently ejecting a dense localized knot of torsional strain (observed as a W or Z boson). This ejection sheds the instability, altering the particle's flow bias and allowing the engine to restabilize into a new harmonic comparison set (e.g., a neutron decaying into a proton).

## **5. Unifying General Relativity and Quantum Mechanics**

**Unification Through Perspective** General Relativity requires a smooth spacetime, while Quantum Mechanics requires discrete interactions. PTI unifies them by demonstrating that "smooth spacetime" is simply the macro-scale illusion of infinite microscopic temporal comparisons.

### **Many Points of View (MPOV) vs. Many Worlds**

PTI rejects the Many Worlds theory. The universe does not branch into infinite copies; rather, the universe looks entirely different depending on the observer's interaction with the Comparative Feedback Loop.

### **Entanglement and the Illusion of Distance**

Two entangled particles are not communicating faster than light across space. Instead, within their specific shared reference frame, the space between them (the temporal comparison) is zero.

### **The Double Slit Experiment and Quantum Tunneling**

- **Double Slit:** A particle behaves as a wave of probabilities because, until an observer establishes a shared reference frame, the particle is merely an unresolved set of temporal comparisons. Measurement anchors the perspective, collapsing the space-time flow into a defined path.
- **Tunneling:** Quantum tunneling occurs when a particle briefly aligns with a reference frame where the spatial barrier is un-compactified back into time, allowing it to traverse the boundary without crossing the intervening space.

## **6. Quantum States, The Pauli Exclusion Principle, and Atomic Structure**

### **Temporal Polarity and the Exclusion Principle**

A "quantum state" is an active intersection of temporal comparisons with a specific temporal polarity. Because space is a finite product of specific time comparisons, it can only be consumed by one engine at a time in a specific direction.

We define a particle's state  $\Psi$  by its temporal comparison set  $C$ , spatial location  $S$ , and temporal polarity  $p$ . For two identical particles within the same reference frame, if their temporal polarities are aligned ( $p_A = p_B$ ), their temporal-spatial consumption must differ:

$$(C_A, S_A) \neq (C_B, S_B) \quad \text{for} \quad p_A = p_B$$

Two particles can occupy the same spatial coordinate only if their temporal polarities are opposite ( $p_A = -p_B$ ), allowing one to align with the inward flow of space and the other with the outward flow.

### **The Formation of Electron Shells**

Electrons occupy stable harmonic "bands" of temporal comparisons around a central nucleus engine. Because of the Exclusion Principle, a single temporal intersection (an orbital) can only support two electron engines. Once an intersection is saturated, additional electrons are forced into higher, more complex temporal comparison sets further from the central mass, creating structured electron shells.

## 7. The Special Case of Light and Massless Particles

### The Special Status of the Photon

Photons are fundamentally exempt from the Engine of the Present. They do not interact with space. From the perspective of a photon,  $\Delta t = 0$  and  $\Delta x = 0$ . They traverse the universe instantaneously from their own reference frame. Furthermore, when a charged particle accelerates, the sudden shift in its torsional strain creates a ripple that detaches as a self-sustaining wave of alternating spatial flow and torsional strain—a photon.

### Gravity's Effect on Photons

While the photon does not interact with space, the space it travels through is physically flowing into massive objects. The photon travels in a straight line relative to itself, but the medium of space is being dragged and consumed by the massive object, causing the observable bending of light.

## 8. Cosmological Implications

### Dark Matter and Dark Energy

- **Dark Matter:** Areas where dense temporal comparisons mimic the gravitational pull (space consumption) of mass without actual energy compactification.
- **Dark Energy:** Expanding space observed by one reference frame may simply be the outward flow of time comparisons outstripping the rate at which matter consumes space in a given polarity.

### Black Holes and Information

A black hole is a region where the phase change of space into time occurs faster than the speed of light. Light cannot escape because the space it occupies is being consumed into time faster than the photon can bridge the comparisons. Information is never lost; it is unraveled entirely into time (Hawking Radiation), translating mass back into pure temporal comparisons escaping the singularity.

### Entropy and the Arrow of Time

Entropy is the measure of time comparisons. The Arrow of Time moves forward because each comparison generates a new entangled result, geometrically increasing the complexity of space. Mathematically, entropy  $S_e$  is proportional to the number of temporal comparisons  $C$ :

$$S_e \propto \ln(C)$$

## The Cyclical Singularity

As entropy increases and mass decays, eventually only photons will remain. When the universe evaporates to a single massive particle interacting with these photons, there will no longer be two distinct points in time to compare. Without comparison, space and time collapse. The universe effectively becomes a point of infinite energy and mass, immediately destabilizing into multiple particles, re-initiating the Comparative Feedback Loop and creating a new Big Bang.

## References

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Thoughts with dates used to get this. (Feed these axioms into AI for your own queries. - forgive the typos)

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08/03/2024

Time was the first thing to exist. It could not exist until it expanded from a zero dimensional point. For time to exist, there had to be at least 2 points in time to compare against each other.

Time continued to expand and as it expanded, each point in time was compared against every other point in time and the results of every comparison ever done. Every comparison result was also compared against every other comparison result.

From the entanglement of results of comparisons in time against other time and against other comparison results, and the results of the comparisons of results of other comparisons, space was created. Space is a product of comparisons of time and comparisons of time comparison results.

From the entanglement of comparisons of time and space and the comparison of the results of those comparisons, energy was created. Energy is a product of time and space comparisons.

From the entanglement of the results of comparisons of time, space and energy, and the comparison of the results of those comparisons, mass is created. Mass is a product of time, space and energy comparisons and the comparisons of those comparison results.

Mass, energy, space and time are derived from the same thing but from different points of view and entanglements.

comparisons are the same things as interactions.

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09/15/2024

Mass interacts with time and as it does it consumes space because time is a perspective dimension of space time.

Light photons do not interact with time or space. It travels through space without interacting with space or time. Photons of light energy are emitted and absorbed instantaneously with no space or time being perceived by the photon.

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11/26/2024

By definition, For something to exist, it must travel through time. Once it stops traveling through time, it stops existing.

Photons are not self aware because they don't perceive themselves to travel through time.

Outside observers can infer that photons exist because we can see that it took time for the photons to travel a distance. Relative to the photon, no time passed and no distance was traveled.

All massive particles (matter) travel through time and space, each consuming some space as it appears to travels through time. In reality, the massive particle is converting some of the space back into time (by unraveling or compactifying it).

The consuming of space and converting back into time, is the cause of what we observe as gravity.

space can be thought of as condensed and concentrated time. This may be a perspective in which many dimensions of time being compacted into fewer spatial dimensions. All time is based on the perspective of an observer and so is all of space.

energy can be considered condensed space and time. Condensed means that relative to an observer, many dimensions of space and time have been compacted into one dimension.

Mass can be thought of as condensed energy, space and time. when 3 separate dimensions of energy each perpendicular to the others are bound together, they can form a massive particle that is stable. It gets its existence by converting the nearby space back into time.

This means that all of time, space, energy and matter exist relative to an observer.

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12/22/2024

When a photon leaves a massive object, travel through space and interacts with another massive object, relative to the photon, no space was traversed and no time passed.

This is because space is really a comparison of two points in time. A point in time is anchored by a massive object. When a photon from 13 billion light years away arrives at massive particles in our eyes, the space between is really the comparison of a point in time 13 billion years ago until now.

Massive particles are the sole source and sink of all photons. This means without massive particles, photons cant exist. Without photons, time can't be compared so space can't exist. at least 2 points in time must exist and compare each other for either point in time to exist.

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01/02/2025

Massive particles convert space into time (the present)

01/07/2025

Massive particles interact with space as they move through it. non-massive particles such as photons do not interact with the space that they move through.

05/05/2025

It is not so much that matter moves through space as much as space flows through matter. Space flows into/through matter in one direction of the intersecting time, and it flows out of/away from matter in the other direction of intersecting time. This flow of space through matter/mass is the real cause of gravity.

The expanding space to one observer aligned with a certain direction and polarity of time, can be observed by another observer aligned in another direction and polarity of time as contracting space.

The frame of reference can determine if the observer sees space contracting or expanding. The reference frame is defined by how the adjacent particles that make up the observer are particle like instead of energy like, space like or time like.

Time comparisons may intersect and get woven together to create space. Since each point in time will compare itself against every other point in time and every comparison, there is an infinite supply of comparisons. As time intersects with the space created, it appears to be a massive particle. In one direction of time, the massive particle appears to be emitting space and in the other direction of time, it appears to be consuming space. The particle is neither consuming or emitting space. The particle just appears at the intersection that the interesting stuff is happening.

For massive particles to exist by traveling through space and time, they must continually compare themselves against different adjacent points in time and space.

05/31/2025

there is an engine/factory that acts as a catalyst in the reaction of converting 2 points of time and some space, to allow energy to appear as a mass. The conversion causes space to disappear, and for the properties of mass to appear in the next plank time. We must have the perspective of time moving to the next plank time (comparing adjacent plank time) for this process to occur. Also the net effect is a quanta of space is no longer present from that perspective. It also gives the illusion that the particle is causing space to disappear.

6/1/20255

The engine/factory could simply be set of polarized waves from a particular perspective. The appearance of mass is only from a set of perspectives.

01/10/2026

An alternative to the many worlds explanation (in quantum physics) is the many points of view (many reference frames) explanation. If you make a measurement to determine that the spin of an electron is up, then you will know that anyone that shares your point of view(reference frame) will see the spin of the entangled positron as down. The entanglement only occurs in a single point of view(reference frame). You can only communicate with people or things that share your point of view. It is possible that a photon may not observe the spin of the electron the same way that you do. It is also possible that a photon may not observe the spin of an electron at all. The point of view or reference frame of (no longer 2 particles) a photon is entirely different. In that reference frame, no time or distance separates the particles that emit photons and the particles that absorb photons.

01/17/2026

The Higgs field that excitations of other fields interact with may just be space. (Space = Higgs Field)

03/17/2026

At the end of time, when the universe expands and all particles eventually cool down all matter particles will eventually decay into photons. When there is no longer more than one particle, there will no longer be space or time. Space and time need more than one particle to exist. There will be only one particle to interact with all photons. It will effectively have infinite energy in the size of a single particle. It will also have all of the mass of the entire universe. All of that energy will eventually decay into multiple particles causing space and time to exist, causing a big bang.