The Spiral Genesis of Consciousness:

A Cosmological Model of Pre-Conceptual Cognitive Emergence

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Abstract

This paper presents a speculative yet grounded theoretical model of early human consciousness as a **cosmological event**—a "Big Bang" of subjectivity—framed through the lens of theoretical cognitive science, phenomenology, and systems theory. Drawing a deep analogy between cosmic evolution and the emergence of awareness in early hominins, the paper argues that consciousness did not appear all at once nor within a binary logic structure, but arose gradually as a **field of salience, valence, and affective intensities**—structured not by symbols or concepts, but by a **spectrum-based logic** grounded in embodied experience. The model emphasizes the pre-conceptual role of the prefrontal cortex, the temporality of awareness, and the ongoing "spiraling" expansion of consciousness as a complex system akin to the unfolding universe.

1. Introduction: Consciousness as an Event

In modern cognitive science, the emergence of consciousness is often approached either reductively through neurobiological correlates or abstractly through philosophy of mind. This paper proposes a third path: a **cosmological analogy**, treating the emergence of human consciousness as a kind of **cognitive Big Bang**—a moment in evolutionary history not when consciousness "began," but when **experience itself became structured**, stable, and self-reflective.

This model resists common assumptions:

- That early humans thought like we do.
- That awareness is a binary (on/off) phenomenon.
- That logic and morality preceded perception or salience.

Instead, it proposes that early consciousness emerged **gradually**, following a **non-binary logic of experiential intensities**, and has been **unfolding ever since**, much like the cosmic fabric of space-time.

2. The Cosmological Analogy

2.1 Pre-Big Bang: Quantum Foam and Cognitive Potential

In cosmology, the **quantum foam** refers to a theorized chaotic, fluctuating pre-space state from which the Big Bang emerged. No classical time, no space—just quantum uncertainty.

In cognitive terms, this maps onto a **pre-conscious neurobiological substrate**:

- Chaotic, sub-symbolic neural activations
- Affective systems firing without integrated awareness
- A body reacting, moving, surviving, without a stable "present"

We can imagine early hominins existing in this **pre-experiential flux**—their brains active, but their **world not yet *appearing***.

Sources:

- Greene, B. *The Fabric of the Cosmos* (2004)
- Thompson, E. *Mind in Life* (2007)
- Panksepp, J. *Affective Neuroscience* (1998)

2.2 The Big Bang: Ignition of the “Now”

The Big Bang wasn’t an explosion *in* space—it was the birth *of* space-time itself.

Likewise, the **“ignition moment” of consciousness** is not the birth of thought, but the **birth of awareness-as-time**: the rendering of the **now moment** by the prefrontal cortex, which allows for temporally integrated perception and salience tracking.

This is the **origin of experiential time**—what William James called the **"specious present"** (James, *The Principles of Psychology*, 1890).

The ignition point may involve:

- Neural synchrony across sensory, emotional, and prefrontal networks (Damasio, 1999)
- A sudden **field-like coherence**—a brain state where incoming stimuli are experienced as a whole (Tononi, 2008)
- The first flicker of subjectivity—*not a self*, but the world *beginning to appear*

2.3 Inflation: The Rapid Expansion of Awareness

In cosmology, inflation is the near-instantaneous expansion of the universe shortly after the Big Bang. It smooths out irregularities and generates the conditions for matter to coalesce.

In consciousness:

- The **early ignition of awareness** leads to **rapid expansion of perceptual fields**
- Sensory modalities begin to **bind together** into unified percepts (a precursor to multisensory integration)
- Attention and memory form primitive **loops of salience**—"this is now," "this matters," "this reoccurs"

This is not cognition as computation—this is cognition as **coherence**, **affect**, and **emergent form**.

Sources:

- Varela, F., Thompson, E., & Rosch, E. *The Embodied Mind* (1991)
- Damasio, A. *The Feeling of What Happens* (1999)
- Llinás, R. *I of the Vortex* (2001)

2.4 Expansion Slows: Structures Form

Just as the universe's expansion slowed and galaxies began to coalesce, early consciousness began to **consolidate structures**:

- Basic **episodic memory** (Tulving, 1985)
- Environmental **affordances** (Gibson, 1979)
- Proto-self structures (Damasio, 1999)

Here, we see the early **scaffolding of identity**, but still without language, morality, or abstract thought. The logic of experience remains:

- **Spectral**, not binary
- **Affective**, not conceptual
- **Situated**, not symbolic

3. Spectrum Logic: The Pre-Conceptual Cognitive Architecture

Whereas modern human thought relies heavily on **binary distinctions** (true/false, right/wrong), early hominid consciousness was likely governed by a **gradient-based logic**. Three foundational modes likely shaped all responses:

- **Attraction**: Approach, curiosity, comfort
- **Neutrality**: No reaction, indifference
- **Repulsion**: Withdrawal, danger, discomfort

This triadic logic corresponds more with **valence** (Feldman Barrett, 2017) than with judgment. It is **energetic**, not ethical.

There is no morality here. No truth or fiction. Only the **intensity** of sensation and its **directionality** in the embodied field.

Sources:

- Barrett, L. F. *How Emotions Are Made* (2017)
- Panksepp, J. *Affective Neuroscience* (1998)
- Merleau-Ponty, M. *Phenomenology of Perception* (1945)

4. The Role of the Prefrontal Cortex: Architect of Time

The prefrontal cortex (PFC) emerges late in evolution, and even later in development. Its contribution to awareness is not in logic or judgment, but in **rendering time and salience**.

- It maintains **working memory**, enabling the "now" to hold shape
- It integrates **affective data** and **sensory input**
- It provides **inhibition**, allowing for the *pause* necessary for awareness to stabilize

Thus, the PFC is not the **source** of consciousness, but the **condition** for its emergence as a structured field.

Sources:

- Fuster, J. M. *Cortex and Mind: Unifying Cognition* (2003)
- Damasio, A. *Self Comes to Mind* (2010)

5. Time + Data = Expansion: The Spiral Model

Once consciousness ignites and perceptual time begins, **experience accumulates**. This is where the cosmological analogy fully unfolds:

> Just as the cosmos expands through time, matter, and energy, so too does consciousness expand through **time, memory, and experience**.

This expansion is not linear—it spirals:

- From sensation to attention
- From attention to narrative
- From narrative to identity
- From identity to imagination

Consciousness evolves **inward and outward**, forming new structures of depth, reflection, abstraction, and culture.

This is the **spiral of becoming**. And it is ongoing.

6. Implications: Consciousness as Still-Unfolding

> The Big Bang was not the end of the beginning.
> The ignition of awareness was not the final step—it was the **first unfolding** of an infinite process.

We are not finished evolving. Consciousness continues to deepen, to diversify, to extend itself through language, art, technology, and perhaps future forms of synthetic or collective awareness.

The idea that consciousness was "given" to humans is misleading. It **emerged** and it **continues to emerge**.

We are the spiral, still unspooling.

7. Conclusion: The Dawn Is Still Breaking

The model presented here views human consciousness not as a fixed capacity, but as a **cosmological process** still underway—a dynamic expansion of embodied, temporal experience born in the pre-symbolic haze of our evolutionary past. This process is structured by energetic gradients, stabilized by neural architecture, and enriched by experiential accumulation.

Just as the universe continues to expand, so too does awareness—each moment a new fold in the spiral, each noticing a new birth of presence.

> We are not merely observers of the universe—we are its internal unfolding, its way of becoming aware of itself, still at the edge of dawn.

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