

DEEP BIG HISTORY:

Humanity's Journey Within a Living Universe¹

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The Provisional Nature of Paradigms

Before exploring alternative paradigms, it is useful to step back and bring a meta-perspective to this inquiry. A paradigm is a self-consistent pattern of thoughts, concepts, and assumptions about the nature of reality. As a theoretical and philosophical framework, a paradigm provides a useful way of viewing reality as long as its concepts are in accord with what is being described. When our understanding of the nature of reality changes, so too will the paradigm change.

This essay offers a perspective of Big History based upon a living systems paradigm. In offering this perspective, I recognize that *all paradigms are provisional* and evolve as our understanding of the universe grows and deepens. Therefore, I consider a living universe paradigm as provisional and open to change as our knowledge of the universe develops.

We are in a time of deep change in how reality is understood and described. Scientific materialism is no longer a fully validated paradigm as some of its underlying assumptions are being questioned by science. Science has become so powerful that it is challenging itself and its own deep assumptions regarding concepts as fundamental as “time,” “space” and “matter.” Likewise, neither is the paradigm of a living universe fully validated as many of its assumptions are also questioned by science. This is a time of exciting discovery and change. Openness to discovery is vital for developing a scientific paradigm that fits most closely with our evolving understanding of the universe. With an appreciation for the developmental and evolving nature of *all* paradigms, let's explore the worldview of a living universe.

Big Differences Between “Big History” and “Deep Big History”

Currently, Big History is based upon a paradigm of “scientific materialism” which makes controversial assumptions regarding the nature of reality.² Materialism is the belief that only physical reality exists and nothing else. In this view, all things are composed of physical matter and all phenomena emerge from the interactions of physical matter, including consciousness. Physical matter is regarded as the sole cause of everything, including human thought, feeling, and action. In this view, the universe is dead at the foundations—inanimate, mindless and without consciousness. The basic assumptions of current Big History can be summarized as follows:

- Measurable matter is the only reality and is essentially mechanical in its workings.
- Matter is without consciousness or subjectivity.
- Because there is no underlying consciousness, nature has no guiding purpose and evolution has no inherent meaning.
- Consciousness is a by-product bio-chemistry, is largely unique to humans and is confined within the brain.

The view that measurable matter is the only reality is being questioned by science which regards this as a very limited view which leaves out the vast majority of the known universe. It is now widely recognized that 95 percent of the known universe is invisible and is not directly measurable. What comprises the 95 percent of reality is often described as “dark matter” and “dark energy.” These two, foundational aspects of reality are called “dark” because they cannot be observed directly by our physical senses. Therefore, *the current foundation of Big History is based upon a description of reality that includes only 5 percent of the known universe and excludes 95 percent of the known cosmos.* In contrast, “Deep Big History” seeks to take into account the larger known universe, including that which is knowable with capacities that reach beyond the physical senses and are extra-sensory in nature. For example, scientific experiments have demonstrated that consciousness has non-local properties and that “remote viewing” (gaining meaningful information regarding about people and locations that are beyond the reach of our physical senses) appears to be a normal part of human capacities.³ Simplifying, here are contrasting assumptions that describe the universe as a living system:

- Reality is comprised of both matter that can be measured directly as well as other forms of matter and energy that can only be measured indirectly.
- All material forms have some degree of “centering subjectivity” or consciousness as an integral aspect of their functioning.
- Consciousness or a knowing capacity is integral to the ecology of the deep universe and it is scientifically valid to explore the nature of meaning and the purpose of living.

Deep Big History looks beyond the shallow descriptions of reality offered by scientific materialism and seeks a more inclusive understanding of reality.⁴

A Living Systems Paradigm for Big History

The idea of a “living universe” is not a new perspective. More than two thousand years ago, Plato described the universe as a single living creature that encompasses all living creatures within it. To begin, it is helpful to contrast the assumptions of a non-living universe with those

based on a living systems perspective. The prevailing paradigm of Big History assumes that for something to be considered “living,” the system must include four key capacities:

- **Metabolism:** the ability to break matter down as well as to synthesize it
- **Self-regulation:** the ability to maintain stability in its operation
- **Reproduction:** the ability to create copies of itself
- **Adaptation:** the ability to evolve and fit into changing environments

These four capacities can be found, not only in plants and animals but also in the functioning of the universe:

Metabolism: Black holes exist throughout the universe, continuously breaking down the matter that is drawn into them. The universe also has the capacity for synthesis as simple matter, present at the formation of the universe (helium and hydrogen), is converted through supernova explosions into carbon, nitrogen, oxygen and sulfur—the essential constituents from which we are made.

Self-regulation: The universe is able to endure and evolve over billions of years as a unified system and produce self-organizing systems at every scale, from atomic to galactic, that can persist for billions of years.

Reproduction: Many cosmologists theorize that on the other side of black holes are white holes giving birth to new cosmic systems.

Adaptation: The universe has evolved over billions of years to produce systems of increasing complexity and coherence woven together into a self-consistent whole.

Because these properties of a living system are integral to the functioning of the universe, it suggests it is proper to describe the universe as a living system. Looking more deeply, here are six, key attributes of our universe that lend further support to a living systems perspective:

1. A Unified Whole— In the last several decades, scientific experiments have repeatedly confirmed ‘non-locality’ and the understanding that, at the quantum level, the Universe is a deeply unified system which is able to communicate *instantly* across impossibly vast distances. To illustrate, at the speed of light, it takes more than eight minutes for a photon to travel from the sun to the Earth and more than 14 billion years to travel across our visible Universe. Yet, quantum physics demonstrates these unimaginably vast distances are traversed and transcended, instantaneously, in the quantum realm. Science no longer views the Universe as a disconnected collection of planets, stars, and fragments of matter. Instead, the Universe is fully unified and connected with itself at

every moment. This does not mean that scientists understand how this connectivity works—only that it is real and, at a fundamental level, the universe is a unified system.

2. Immense Background Energy—Scientists used to think that empty space was essentially “empty” and was characterized by the absence of everything. However, scientists have discovered there exists an extraordinary amount of background energy permeating the universe, including empty space. Empty space is not empty. The physicist, David Bohm calculated that a single cubic centimeter of “empty space” contained the energy equivalent of millions of atomic bombs.⁵ Even in a complete vacuum, there exist phenomenal levels of background energy sometimes referred to as “dark energy”—an energy that comprises roughly 73 percent of the known universe and is viewed as the force responsible for the increasing acceleration in the expansion of the universe. We live within an ocean of subtle energy of such immense power that it is virtually incomprehensible.

3. A Co-Arising Universe: At every moment, the entire Universe is emerging freshly as a singular orchestration of cosmic expression. Nothing endures. All is flow. In the words of the cosmologist Brian Swimme, “The Universe emerges out of an all-nourishing abyss not only fourteen billion years ago but in every moment.”⁶ There is one grand symphony in which we are all players, a single creative expression emerging freshly at each moment—a uni-verse. While an evolving Universe provides a stunning narrative of ‘horizontal’ unfolding *across* time, the insight of an emerging Universe adds the ‘vertical’ dimension of the Universe continuously arising *in* time. Despite outward appearances of solidity and stability, the Universe is a completely dynamic system.

4. Consciousness at Every Scale: Scientists are finding evidence for consciousness or a centering subjectivity throughout the Universe. From the atomic level to the galactic scale, a self-organizing, centering capacity appears to be in ways fitting for each scale. In turn, the capacity for centering self-organization points to the presence of some level of knowing consciousness. The physicist and cosmologist Freeman Dyson writes that, at the atomic level, “It appears that mind, as manifested by the capacity to make choices, is to some extent inherent in every electron.”⁷ This does not mean that an atom has the same consciousness as a human being, but rather that an atom has a centering subjectivity appropriate to its form and function. Max Planck, developer of quantum theory, stated, “I regard consciousness as fundamental. I regard matter as derivative from consciousness. We cannot get behind consciousness. Everything that we talk about, everything that we regard as existing, postulates consciousness.”⁸ An ecology of consciousness seems to permeate the Universe.

5. Freedom at the Foundations: Quantum physics describes reality in terms of probabilities, not certainties. This means that uncertainty and freedom are built into the very foundations of existence. No individual part of the cosmos determines the functioning of the whole; rather, everything is interconnected with everything else, weaving the cosmos into one vast interacting system. In turn, it is the consistency of interrelations of all the parts that determines the condition of the continuously emerging whole. We therefore have great freedom to act within the limits established by the larger web of life.

6. Able to Reproduce Itself: A vital capacity for any living system is the ability to reproduce itself. A widespread view in cosmology is that our Universe reproduces itself through the functioning of black holes. Physicist John Gribbin writes, “Instead of a black hole representing a one-way journey to nowhere, many researchers now believe that it is a one-way journey to somewhere—to a new expanding Universe in its own set of dimensions.”⁹ Given the presence of billions of black holes in our Universe, there could be countless other cosmic systems continuously being born by ‘budding off’ from our Universe through the birth canal of black holes. Gribbin writes that Universes are not only alive; they also evolve as do other living systems: “Universes that are ‘successful’ are the ones that leave the most offspring.”¹⁰ The idea that there have been countless Universes evolving through time is not new. A precursor can be found from 1779 when the philosopher David Hume wrote, “Many worlds might have been botched and bungled, throughout an eternity, ere this system was struck out; much labour lost, many fruitless trials made; and a slow, but continued improvement carried on during infinite ages in the art of world-making.”¹¹

When we bring these attributes together, a clearer picture of our remarkable Universe comes into focus. As a provisional paradigm, the most meaningful description of our Universe seems to be that of a living, cosmic hologram—a unified super-organism that is continuously regenerated at each moment and whose essential nature includes consciousness, or a knowing capacity, that enables systems at every scale of existence to center themselves and exercise some measure of freedom of choice. In addition, the Universe appears able to reproduce copies of itself via black holes. This suggests our Universe exists within a vastly larger cosmic garden or multi-verse and is but one among countless others cosmic systems. Overall, the vision of our Universe emerging from science and cosmology is that of a magnificent super-organism evolving in complexity and consciousness. We humans are completely immersed within this regenerative, holographic superorganism. While these scientific properties do not “prove” the universe is a living system, they clearly point in the direction of aliveness and invite a much

deeper inquiry into how a living systems perspective could inform humanity's evolutionary journey.

Contributions of a Living Systems Paradigm

What does a living systems paradigm bring to Big History? One major contribution of a living systems paradigm is the inclusion of co-evolution of culture and consciousness as an integral aspect of the human journey.¹² From this perspective, throughout history humanity's capacity for self-reflective consciousness has developed progressively—from the magical world of the hunter-gatherer, to the nature-based world of the agrarian farmer, then into the dynamic world of the urban-industrial society, and now into a holographic perspective with collective consciousness rapidly awakening within our global brain. Here are other contributions of a living systems paradigm:

1. Awakening to Our Bio-Cosmic Identity: In the paradigm of scientific materialism, we are no more than bio-chemical beings—evolutionary accidents whose consciousness and aliveness are separate from the rest of the non-living and unconscious universe that surrounds us. In contrast, from a living systems perspective, we are both biological beings and cosmic participants in a vast field of life-energy. In this view, our identity is immeasurably deeper and larger than imagined by scientific materialism: Physicist Brian Swimme explains that the intimate sense of self-awareness we experience bubbling up at each moment, "is rooted in the originating activity of the universe. We are all of us arising together at the center of the cosmos."¹³ We thought that we were no bigger than our physical bodies, but now we are learning that we are participants in the flow of continuous co-arising of the cosmos. Awakening to our larger identity as both unique and inseparably connected with a co-arising Universe transforms feelings of existential separation into experiences of subtle communion as bio-cosmic beings. We are far richer, deeper, more complex, and more alive than we ever thought. To discover this in our direct experience is to enter a new age of exploration and discovery that transforms our description of human history.

2. Discovering Our Cosmic Purpose: A non-living universe is without consciousness and is therefore oblivious to any sense of human purpose. As existentially separate life-forms, we may strive heroically to impose some reason for our existence on the universe, but this is ultimately fruitless in a cosmos unaware of life. In striking contrast, a living universe seems intent on growing self-referencing and self-organizing systems within itself at every scale. We are expressions of aliveness that, after nearly 14 billion years, enable the universe to look back and reflect upon itself. A living universe paradigm brings a profound shift in our evolutionary purpose: We are moving from

seeing ourselves within a fragmented and lifeless cosmos without apparent meaning or purpose, to seeing ourselves on a magnificent journey within a living and unified cosmos whose purpose is to serve as a learning system. If the cosmos is a learning system, then a primary purpose is for us to learn from both the pleasures and the pains of existence. If there were no freedom to make mistakes, there would be no pain. If there were no freedom for authentic discovery, there would be no ecstasy. In freedom, we experience both pleasure and pain in the process of developing our identity as beings of both earthly and cosmic dimensions. After nearly 14 billion years of evolution, we stand upon the Earth as agents of self-reflective and creative action who are engaged in a time of great transition and consciously learning to live in a living universe.

3. Awakening to Deep Meaning: If the universe is dead at its foundations, then, in its depths it has no feeling for us as human beings nor does it offer a sense of meaning and purpose. Because a non-living universe is unconscious at its foundations, it is indifferent to humanity and unknowing of our evolving creations and conditions. Nothing will ultimately matter to non-living matter. All will be forgotten. An old saying goes, “A dead man tells no stories.” In a similar way, “A dead universe tells no stories.” In contrast, a living universe is itself a vast story continuously unfolding with countless characters playing out gripping dramas of awakening.

If we regard the universe as dead at the foundations, then feelings of existential alienation, anxiety, dread, and fear are quite reasonable. Why seek communion with the cold indifference of lifeless matter and empty space? If we allow ourselves to drop into life, won't we simply sink into existential despair? However, if we live in a living universe, then feelings of subtle connection, curiosity, and gratitude are understandable. We see ourselves as participants in a cosmic garden of life that the universe has been patiently nurturing over billions of years. A living universe invites us to shift from feelings of indifference, fear, and cynicism to feelings of curiosity, love, awe, and participation.

4. Developing Ethics of Compassion: If we are no more than biological entities, then it makes sense to think we could disconnect ourselves from the suffering of the rest of life. However, if we are all swimming in the same ocean of subtle aliveness, then it is understandable that we each have some measure of direct experience of being in communion with the larger fabric of life. Because everything shares the same matrix of existence, the totality of life is already touching each of us and co-creating the field of aliveness within which we exist. A felt ethics emerges from our intuitive connection with the living Universe in the form of a ‘moral tuning fork.’ We can each tune into the non-local field of life and sense what is in harmony with the wellbeing of the whole. When we are in alignment, we experience a warm, positive hum of wellbeing as a kinesthetic

sense that we may call ‘compassion.’ In a similar way, we can also experience the dissonant hum of discordance and dissatisfaction. In recognizing we can contribute with discernment to the unfolding story of cosmic evolution, we shift from existential disconnection to feelings of intimate communion and regard for all that exists.

5. Fostering Sustainable Ways of Living: If we regard aliveness as the only true wealth, then it is only natural for us to choose ways of living that afford greater time and opportunity to develop the areas of our lives where we feel most alive—in nurturing relationships, caring communities, walks in nature, creative expressions, and service to others. In seeing the Universe as alive, we naturally shift our priorities from an ‘ego economy’ based upon consuming deadness to a ‘living economy’ based upon growing aliveness. An aliveness economy seeks to touch life more lightly while generating an abundance of meaning and satisfaction.

6. Bringing Bio-Cosmic Ethics to the Bio-Genetic Revolution: Rapid advances in genetic engineering will soon create a new array of human species and a radically new trajectory for Big History. Humans will be genetically enhanced for increased intelligence, disease resistance, resilience to stress, and more. Within a few decades, the Earth will be inhabited by genetically augmented humans whose great advantages could make them both essential and unstoppable—almost instantly, producing a bio-genetically stratified society. Each generation of super-humans could establish a new base line for upgrading the next generation, thereby producing radically different types of humans. If augmented capacities are grounded in the shallow paradigm of scientific materialism, they seem likely to create a bleak future for humanity. To illustrate, Yuval Harari is the author of *Homo Deus* and his views are widely quoted in the mainstream. In his view, augmented humans will be honored for “the contribution we make to the data streams that various computer-assisted algorithms are using to generate value and create production.”¹⁴ Scientific materialism provides the foundation for this impoverished and shallow view of humanity’s evolutionary potentials. In his book, Harari writes that, “In the future, we may see real gaps in physical and cognitive abilities opening between an upgraded upper class and the rest of society.”¹⁵ Harari describes how we soon could have “upgraded superhumans who dominate the world” thereby creating “a new superhuman caste that will abandon its liberal roots and treat normal humans no better than nineteenth-century Europeans treated Africans.”¹⁶ In turn, he states the most ruthless evolutionary strategy might be to let go of the useless third class—the world’s poor and unskilled—and dash forward with the first class only. With that approach, we may need “a handful of upgraded superhumans far more than millions of healthy ordinary workers.”¹⁷ Without a bio-cosmic perspective as a transcending ethical context for guiding the emerging bio-genetic revolution, there is the great danger of creating a

new caste system—and a profoundly diminished and distorted Big History for humanity. A similar caution seems to apply to the revolution in artificial intelligence now underway.

In conclusion, as a provisional paradigm, a living systems perspective brings with it a transformed description of humanity's bio-cosmic identity, purpose and journey. It also elevates a compassionate concern for sustainable ways of living and a natural ethics for guiding the development of a future with bio-genetically augmented humans. These capacities are of immeasurable value to humanity as we seek to grow through a time of profound planetary transition and come together to build a thriving species-civilization. *In summary, it is scientifically valid, critical to our pathway into the future, and enormously enriching to bring the depth of a living systems paradigm into the understanding and development of Big History.*

¹ This essay updates an earlier essay with the same title that was presented at the second international conference on Big History at Dominican University, San Rafael, California in August, 2014.

² See: <http://en.wikipedia.org/wiki/Materialism>

³ My personal experience with remote viewing is relevant to this conclusion: In the early 1970's, over a period of nearly three years, I was a subject in the earliest remote viewing experiments funded by NASA at the Stanford Research Institute (now SRI International). There I had the opportunity to learn first-hand about extra-sensory capacities that all humans seem to possess as a natural ability. Results from the formal, rigorously controlled experiments have been reported in some of the most prestigious science and engineering journals in the world. See: H. Puthoff and R. Targ, "A Perceptual Channel for Information Transfer Over Kilometer Distances: Historical Perspective and Recent Research," *Proceedings of the IEEE* (March 1976): 329-54. R. Targ and H. Puthoff, "Information Transfer Under Conditions of Sensory Shielding," *Nature* 252 (October 1974): 602-7. Also see: Russell Targ, Phyllis Cole, and Harold Puthoff, *Development of Techniques to Enhance Man/Machine Communication*, Stanford Research Institute, Menlo Park, California, prepared for NASA, contract 953653 Under NAS7-100, June 1974. R. Targ and H. Puthoff, *Mind-Reach: Scientists Look at Psychic Ability*, Delacorte Press/Eleanor Friede, 1977. Based on the success of the first three years of experiments, the psi research became a secret project of the CIA that continued for another twenty years (according to information obtained from the Freedom of Information Act). When the research was taken over by the CIA, I dropped out because of ethical considerations.

⁴ This essay draws upon books I've authored in the area of Big History including *Awakening Earth: Exploring the Evolution of Human Culture and Consciousness*, New York: William Morrow, 1993, *The Living Universe: Where Are We? Who Are We? Where Are We Going?* San Francisco: Berrett-Koehler, 2009. Also see the extended essay: "The Living Cosmos: A Theory of Continuous Creation," in the journal *ReVision*, Vol 11, No. 1, Summer, 1988. For further information, see my website: www.DuaneElgin.com For recent writing see: "Humanity's Journey Home: We Are Bio-Cosmic Beings Learning to Live in a Living Universe" <https://tinyurl.com/yajhw88p>

⁵ Bohm, D. *Wholeness and the Implicate Order*, London: Routledge and Kegan Paul, 1980, p. 175.

⁶ Swimme, B. (1996). *The hidden heart of the cosmos* (p.100). New York: Orbis Books.

⁷ Dyson, F. (1988). *Infinite in all directions* (p. 297). New York: Harper & Row.

⁸ Planck, M. (1931). *The Observer*.

⁹ Gribbin, J. (1993). *In the beginning: The birth of the living universe* (p. 244). New York: Little Brown and Co.

¹⁰ Ibid, p. 252.

¹¹ Hume, D. *Dialogues Concerning Natural Religion*, 1779.

¹² Elgin, *Awakening Earth*, Op. Cit.

¹³ Swimme, Op. Cit., p. 112.

¹⁴ See interview by Ezra Klein: “Yuval Harari, author of *Sapiens*, on how meditation made him a better historian,” <https://www.vox.com/2017/2/28/14745596/yuval-harari-sapiens-interview-meditation-ezra-klein>

¹⁵ Yuval Harari, *Homo Deus*, New York: Harper Collins, 2017, p. 352.

¹⁶ Ibid, p. 355.

¹⁷ Ibid, p. 355.