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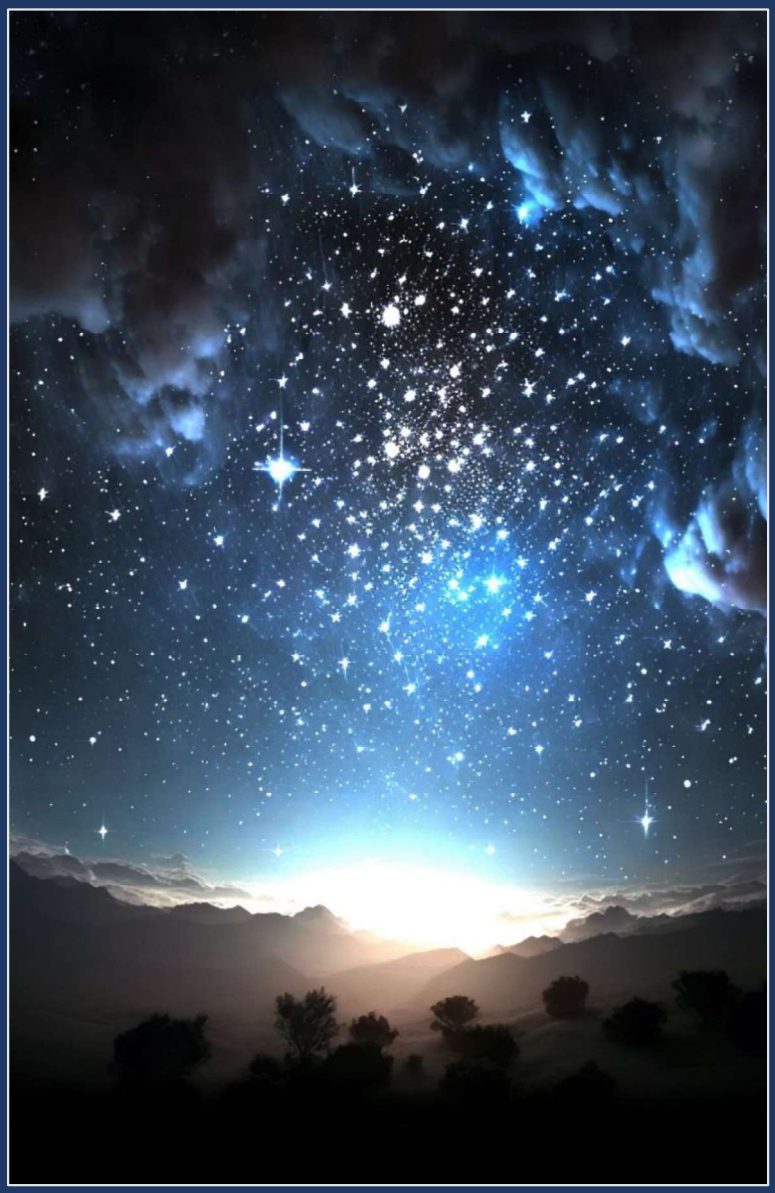
SPECIAL ISSUE

Reflections on Brian Thomas Swimme, *Cosmogenesis: An Unveiling Of the Expanding Universe*



Sebastian Swimme,

"The Universe Thinking"

The historic mission of our time is to reinvent the human at the species level, through critical reflection, within the community of life systems, in a time-developmental context, through story . . . shared dream experience [and practice].

—Thomas Berry, *The Great Work*

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THE LIVING EXPERIENCE OF COSMOS

Sheri Ritchlin[*]

> *We are beyond the time when the scientific story of the universe could so identify the world of reality with the material and mechanistic aspects of the universe as to eliminate our capacities for that intimate communion with the natural world that has inspired the human venture over the centuries [and] has evoked from our poets and musicians and artists and spiritual personalities all those magnificent works of celebration that we associate with the deepest modes of fulfillment of the human personality.*
>
> —Brian Swimme and Thomas Berry, *The Universe Story: From the Primordial Flaring Forth to the Ecozoic Era—A Celebration of the Unfolding of the Cosmos* [1]

Brian Thomas Swimme's new book Cosmogenesis takes the insights of The Universe Story to a new level, providing a demonstration of the experience of cosmogenesis through a series of beautifully told personal stories. What emerges from these is an understanding of what scientists have come to realize: We live not in a fixed cosmos but in a cosmogenesis—a universe developing from a primordial simple state, "First Light,"[2] into ever more complex states, which include our own human states of awareness. Swimme, an

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[1] Brian Swimme and Thomas Berry. *The Universe Story: From the Primordial Flaring Forth to the Ecozoic Era--A Celebration of the Unfolding of the Cosmos* (New York: Harper Collins,1992).

[2] "Big Bang" was a term used by Fred Hoyle in a 1949 radio program to contrast his own steady-state universe view with the view that the "universe was created in one big bang at a particular time in the remote past." It entered common parlance in the 1970s, though scientists agree that there was no sound. In place of this I use First Light.

evolutionary cosmologist, explains in the Prologue that his choice to enter the story is directly related to the book's theme.

> I had tricked myself into thinking cosmology was the story of how things "out there" evolved through time. But then I realized . . . that I was as much a development of the universe as were stars and galaxies. If I wanted to tell the story of the expanding universe and how it developed through time, I needed to include the story of my long struggle out of the structures of existence I had been born into.[3]

Post-War Context

This new cosmology involves a huge shift in perspective, which is best seen against the prevailing worldview of the last century. The effects of two devastating world wars had a profound impact on our collective consciousness. The destruction of cities and the deaths of over fifty million people left behind an acute despair and loss of faith. Existentialist writers and playwrights portrayed a world and a universe as being "absurd," devoid of meaning and purpose. It fell to the individual human to find those in himself or herself. Albert Camus retold the Greek myth of Sisyphus, king of Corinth, who was condemned by Zeus for his trickery to push a huge boulder uphill for eternity in the depths of Hades. He finds in the story a nihilistic optimism.

> All Sisyphus's silent joy is contained therein. His fate belongs to him. His rock is his thing. Likewise, the absurd man, when he contemplates his torment, silences all the idols . . . . Thus, convinced of the wholly human origin of all that is human, a blind man eager to see who knows that the night has no end, he is still on the go. The rock is still rolling . . .
>
> One must imagine Sisyphus happy."[4]

But humans were not finding meaning and purpose in the universe. Sisyphus was not happy. This was expressed in the dissonant tones in music, art, and literature at a time when the theme of alienation defined the zeitgeist. The universe was a vast impersonal thing "out there," without purpose, except as the objective study of science. The human was an outsider, walled inside a purely subjective life without broader meaning or context.

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[3] Brian Thomas Swimme. *Cosmogenesis: An Unveiling of the Expanding Universe* (Berkeley: Counterpoint, 2022), 4.

[4] Albert Camus, *The Myth of Sisyphus*, trans. Justin O'Brien (New York: Knopf Doubleday Publishing Group, 2012), 123.

Yet ironically, it is science that broke the impasse of the subjective-objective divide through the discoveries of quantum mechanics in experiments which demonstrated that the observer influenced the outcome of the observed. The human was no longer separated from an objective universe "out there." Philosophy turned to perspectives such as phenomenology, with an emphasis on human experience, and the importance of "story" took hold across many different fields as a legitimate form of conveying information and ideas.

In the 1970s, Passionist monk and cultural historian Thomas Berry used the medium of story to articulate a way out of the postwar worldview. In a 1978 article, "The New Story," he wrote—

> We are in trouble just now because we do not have a good story. . . . The Old Story—the account of how the world came to be and how we fit into it—is not functioning properly, and we have not learned the New Story. The Old Story sustained us for a long time. It shaped our emotional attitudes, provided us with life purpose, energized action. . . . We awoke in the morning and knew where we were. . . . Everything was taken care of because the story was there. It did not make men good; it did not take away the pains and stupidities of life or make for unfailing warmth in human association. But it did provide a context in which life could function in a meaningful manner.[5]

University of Oregon: Beginnings

During the period when Berry was writing "The New Story," Swimme was in graduate school at the University of Oregon where he had his first intuition that understanding the universe requires more than the objective, rational thought of mathematics.

> I loved the mathematics; I had devoted more of my life to its study than to anything else. But could mathematics alone convey the fullness of the universe? Or was something more required? This something more, also known as "other ways of knowing"—the nonconceptual, conative, intuitive, heart-centered, mystical—refers to knowledge that comes not from an objective analysis of the thing but from a communion experience with the thing, the prime illustration being the knowledge one gains when falling in love. (175)

[5] Thomas Berry, "The New Story." In *Teilhard in the 21st Century: The Emerging Spirit of Earth*, ed. Arthur Fabel and Donald St. John (Maryknoll, NY: Orbis Books, 2003), 77.

In August 1978, Swimme began his career teaching mathematics and physics at the University of Puget Sound. He dedicated early morning hours at his makeshift desk to pore over his equations and pursue his research into the mathematical structure of the cosmic microwave background, the light that had been released in the explosion of the universe's beginning. He explained to students,

> If you cup your hands together as if getting water from a stream, approximately seven thousand photons of light from the dawn of time pass through the space between the palms of your hands each instant. Do you see what this means? We are in physical contact with the very origin of the universe.

Photo by Josh Boot on Unsplash

But he did not find interest for his ideas among his colleagues in the mathematics department. He gained more from conversations with classics professor Dolores Maro at the Grotto Café, who introduced him to Greek philosophy and to Pythagoras, who had explored the relationship between numbers and "the music of the spheres."

Honoring a Lineage

The first part of *Cosmogenesis* is a window into the mysterious, yet indisputable power of mathematics to carry us down to the bones of the universe; the infrastructure and dynamics that make a cosmos instead of a chaos. It is an homage to the brilliant lineage of mathematicians from Pythagoras to Descartes, Newton, Einstein, Dirac and forward to Stephen Hawking, Ilya Prigogine, and others. Even without knowing the math itself, nonscientists can appreciate the

remarkable powers of mathematics. If his goal is to make the average person wake up to the intellectual fireworks of this venerable ancestry, he succeeded.

Unable to find colleagues who shared his perspective that the cosmic origin is still unfolding within and around us, Swimme cast about for like-minded people, sometimes jumping in his car and driving for hours to meet mathematicians and physicists in his restless quest. He drove to the Chinook Learning Center on Whidbey Island to hear a lecture by William Irwin Thompson and found many like minds there. He sought opportunities for conversations with thinkers like Arthur Young and Freeman Dyson, a colleague of Einstein's at Princeton's Institute for Advanced Study, who had once said, "I do not feel like an alien in this universe. The more I examine the universe and the details of its architecture, the more evidence I find that the universe in some sense must have known we were coming."[6]

In addition to the difficulty Swimme faced communicating his vision to his peers, he became disillusioned by the hegemony of corporate America over the sciences. Simply put, this is where the money came from for research. But the corporate arrow, pragmatically pointed toward the bottom line, did not align with his sense of the awe and wonder of scientific discovery that he sought to communicate to high school and college students.

When these frustrations reached a crisis point, he returned to the Chinook Learning Center on Whidbey Island. It was during this visit that he came upon Thomas Berry's "A New Cosmic Story," which quickly changed his life. "As I read the opening paragraph, it felt as if I were reading something I myself had written" (160). With the aid of his friend Bruce Bochte and encouragement from his wife Denise, Swimme decided to take a year off to do research and tell the New Story.

Matthew Fox and Meister Eckhart

During this period, Swimme continued to explore his early insight regarding subjective ways of knowing.

> I was wondering if these more 'subjective' ways of knowing had any place alongside mathematical science. Was it meaningful to speak of a heart-centered knowing of the origin of the universe? Would it be as real as the equations that described the universe's birth and development? Could intuitive knowledge be synthesized with mathematical knowledge to form an even deeper understanding? (175)

[6] Freeman Dyson. *Disturbing the Universe* (New York: Basic Books, 1979), 250.

In exploring these ideas, a line from the fourteenth-century German theologian Meister Eckhart, translated by theologian Matthew Fox, caught his attention. Eckhart spoke of a human giving birth to God in every moment; quantum physicists spoke of the quantum fields giving birth to virtual particles every moment. "Should these considerations be sequestered in their separate disciplines of thought? I wrote to Fox with the suggestion that since science and theology are both central to civilization, a newly discovered resonance between them might signal the appearance of the next era of Western civilization" (176). He soon moved to Chicago to teach a seminar for Fox's institute at Mundelein College and to work with him in combining the discoveries of quantum physics with the mystical insights of Meister Eckhart.

Meeting Thomas Berry

The work with Matthew Fox led to the meeting with Thomas Berry that changed the course of both of their lives. Brian had the scientific understanding and insights that Thomas was looking for. Thomas, as a monk and cultural historian, had within his grasp the multicultural and multireligious human story that provided the ground of the scientific story that Swimme had wanted to take to its greater depths. Both had a single-pointed dedication to reframing the story of the human as situated in a *time-developmental universe*.

Few people realize that right up until the end of the eighteenth century, the world and the universe of stars were regarded as fixed and unchanging, except for their regular and predictable cycles. Elizabeth Kolbert's book, *The Sixth Extinction*,[7] is a fascinating account of the discovery that all things change and evolve. Swimme and Berry wanted to convey the orchestrated work of creation from star and galaxy formation to the perfection of a natural order on our own planet.

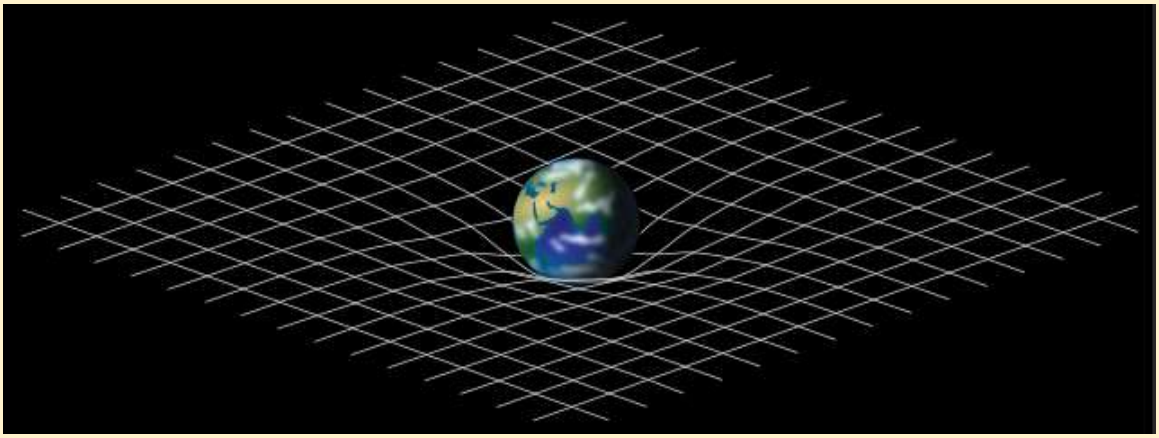
Their first meeting was in the Broadway Cafe in New York City, a favorite haunt of Berry's. He told Swimme,

> The new storytellers will not rise up from science per se. Science will guide the stories each step of the way by grounding us in our best empirical knowledge of the universe, but the foundation for the confidence necessary to become a storyteller is the universe itself. This pertains not just to storytelling but to all roles in society. We find our way into our destinies when we feel we are being commissioned by the whole of things, by life itself. I believe you know this. (204)

[7] Elizabeth Kolbert, *The Sixth Extinction* (New York: Henry Holt and Company, 2014).

When Swimme, an expert in gravitational dynamics, asked the deeper question, "*Why* does gravity pull the rock to the ground?" Berry replied,

> Gravity exists to carry out the universe's aim of constructing communities of every sort. I call this community-building dynamic the third basic law of the universe. This amounts to a cosmological theory of gravity, one that complements the scientific theory. It is universal in that it pertains to everything, whether we are speaking of the attraction between Earth and the Sun or between two humans.
>
> "Wow," I said. "You're saying this theory explains even our experience of love?"



General relativity, spacetime curvature schematic, $G_{\mu\nu} + \Lambda g_{\mu\nu} = \kappa T_{\mu\nu}$ *Wikipedia* CC by 3.0

> Thomas smiled. (255)

Swimme's apprenticeship to this wise elder included more than absorbing Berry's encyclopedic knowledge and his vision. It was daily exposure to a rare quality of human being: Berry's kindness and generosity; his calm, humble demeanor; his presence to everything around him. This was far from the competitive atmosphere of much of academia and the "race to the top" of corporate culture.

The fruit of this collaboration was *The Universe Story*, published in 1992.[8] In this seminal work, Swimme and Berry pointed out that in the last three centuries, cosmology has been the search for empirically based answers to a core set of questions such as How big is the universe? How old is the universe? How did its structures evolve? It was essentially mathematical cosmology in search of

[8] This has since been made into an Emmy award-winning film, *The Journey of the Universe*, with co-creator Mary Evelyn Tucker, as well as a book and a Yale University online course.

material explanations. Traditional questions concerning the role and meaning of humans were relegated to other fields.

> So long as the vast universe could be considered "out there," this separation of investigations was a reasonable procedure, for the concerns and feelings of tiny humans on an obscure planet seemed to have only negligible connections with the great immensity of the physical universe. But this very concentrated study of matter concluded that the universe is not just a vast "out there," but is rather an "in here." . . . It was this very scientific enterprise that articulated the connections between the existence of life forms seeking a way to live a worthwhile life, and the dynamics at the beginning of time.[9]

How has the zeitgeist changed entering the second decade of the twenty-first century? Democratic institutions are still under threat, the post-war world order is under threat with Russia's invasion of Ukraine, and nature itself is under threat with grave climate and extinction crises. The new story, the new zeitgeist, is still being defined but a significant change in the collective is the rise of holistic thinking and practices across many fields. Swimme predicts that the future human will experience human consciousness as the continuing unfolding out of First Light.

> With the acceleration of creativity, perhaps it will only require a century or two for us to establish time-developmental imagination. . . . And when that happens, Immanuel Kant's dream will have come true; we will have "evolved into new beings who have learned to see the whole first." When that transformation is completed, seeing the whole first will be as easy as remembering the first time we made love. Throughout the day and in a hundred different ways, we will experience our existence as taking place within the whole, complex, intelligent, living universe. (311)

In the end we come away, not with a mental definition of cosmogenesis but a feeling of being enlarged and enlivened by all we are a part of and the largesse of creation's on-going gift of life. We are not like Vladimir and Estragon waiting for Godot. Everything we need is right here. Right now. The universe is not without meaning. The meaning is us, receiving the gift and passing it on.

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[9] Swimme and Berry, *The Universe Story*. 23.