

The Cosmogenetic Principle

By Gard Jameson

During the course of one's studies, one may be blessed to come into contact with one or two extraordinary teachers. Such was my case! During my PhD years, two of my most inspirational teachers were Thomas Berry and Brian Swimme, authors of *The Universe Story* and other visionary texts. Thomas Berry is sometimes referred to as the premier Ecologist of the 20th century; and, Brian Swimme, his collaborative partner, a mathematical cosmologist.

Through a series of lectures and illustrations, both Thomas Berry and Brian Swimme provided a stunning appreciation of a principle, which cuts across so many lines, the Cosmogenetic Principle, highlighting a cosmos that exists in a constant genesis of evolutionary growth.

The Cosmological Principle

In *The Universe Story*, Berry and Swimme propose to build upon a principle that was advanced by Albert Einstein in 1931, the Cosmological Principle. Very simply, Einstein's principle suggests "all places are alike," whether we are standing on planet earth or a 100,000 light years away, conditions are alike in terms of the basic elements and forces and governing laws of nature. Such a principle acts as an axiom of understanding appreciation rather than scientific fact; for verification of such a principle as scientific fact is impossible for finite beings without access to all the nooks and crannies of the universe. Readers of *The Urantia Book* might well envisage this principle holding true in the Seven Superuniverses, but not in Paradise.

The search for generalizable cosmological principles provides ordering that is helpful in guiding our appreciation of *the facts* of our reality as well as in inspiring *the values* of our behaviors. Our current culture resists, in postmodern fashion, all inclination to discover natural laws anywhere other than, perhaps, in the realm of matter. Is it such a stretch to suggest natural laws in relation to our most aspirational values?

Building upon the Cosmological Principle, Berry and Swimme propose a principle that also incorporates the dynamic, evolutionary nature of our universe, the Cosmogenetic Principle. They articulate this deep appreciation in their text, *The Universe Story*, narrating the evolutionary saga of our universe as it is currently understood. With certain exceptions, their point of view aligns well with the perspective of *The Urantia Book*.

As an assumption or axiom the Cosmogenetic Principle presents a reasonable understanding which can be beneficial in guiding our behaviors and our self-appreciation in time and space.

Cosmogenesis, as well as its microphase complement, epigenesis refers to structures evolving in time. Cosmogenesis pertains generally to large-scale structures such as galaxies and stellar systems, while epigenesis refers to the development of forms within the life world. What we observe is that forms and structures in the universe arise, evolve in interactions, achieve stable if nonequilibrium processes, and then decay and disintegrate. The Cosmogenetic Principle simply states that the dynamic involved in building the structures that appear in our own region of space-time permeate the universe as well... **the form-producing dynamics at work here are also at work, or are at least latent, everywhere else in the universe.** (Berry, 67)

Many in the domain of physics have presumed that the ultimate principle at work in the universe is the Second Law of Thermodynamics, the law of entropy, by which all things and beings move toward their ultimate dissolution, an inevitable collapse of the universe. This is the assumed fate of an unaware materialist, who is unable to acknowledge an infinite reservoir of material and spiritual energy coursing through the veins of the universe. *"The philosophy of the universe cannot be predicated on the observations of so-called science."* (49:9.4) The note of despair in Bertrand Russell's tragic perspective is overwhelming as he contemplates the destiny of our universe, projecting the law of entropy as the axiomatic ultimate meaning of existence, a presumption of meaninglessness. His sentiments are beautifully paraphrased by the Melchizedek of Nebadon in Paper 102:

TO THE UNBELIEVING materialist, man is simply an evolutionary accident. His hopes of survival are strung on a figment of mortal imagination; his fears, loves, longings, and beliefs are but the reaction of the incidental juxtaposition of certain lifeless atoms of matter. No display of energy nor expression of trust can carry him beyond the grave. The devotional labors and inspirational genius of the best of men are doomed to be extinguished by death, the long and lonely night of eternal oblivion and soul extinction. Nameless despair is man's only reward for living and toiling under the temporal sun of mortal existence. Each day of life slowly and surely tightens the grasp of a pitiless doom which a hostile and relentless universe of matter has decreed shall be the crowning insult to everything in human desire which is beautiful, noble, lofty, and good. (102:0.1)

From the writings of Sir Bertrand Russell we read:

That man is the product of causes which had no prevision of the end they were achieving; that his origin, his growth, **his hopes and fears, his loves and his beliefs**, are but **the outcome of accidental collocations of atoms**; that **no fire**, no heroism, no intensity of thought and feeling, **can preserve an individual life beyond the grave**; that **all the labors of the ages, all the devotion, all the inspiration**, all the noonday brightness of human genius, are **destined to extinction in the vast death of the solar system**, and the whole temple of man's achievement must inevitably be buried beneath the debris of a universe in ruins — all the things, if not quite beyond dispute, are yet so nearly certain that no philosophy which rejects them can hope to stand. (Russell, 107)

Brief and powerless is man's life; on him and all his race the slow, **sure doom falls pitiless** and dark. Blind to good and evil, reckless of destruction, **omnipotent matter rolls on** its relentless way... (Russell, 115)

Cosmogogenesis suggests that *the order in the universe (cosmos)* is constantly expressing itself in order-generating power and splendor, in a manner of ongoing renewal and *genesis* that, in fact, every moment is a moment of genesis, creative expression, exhibiting both mystery and a compelling quality of adventure. Taken together the Law of Entropy and the Cosmogenetic Principle paint a much truer picture of universe processes. Similar to the three deities of the Indian pantheon, Brahma, Vishnu and Shiva, we observe processes of generative creativity, nourishing sustenance as well as death and renewal in all aspects of nature.

Universal Unity

Our universe is observed to be in a constant process of evolutionary self-energizing. Energy is one common denominator at the heart of the entire universe, whether it be physical, mental or spiritual energy. Nothing in the universe is possible without energy. The Second Law of Thermodynamics demonstrates the pathway of how unrenewed energy does ultimately trend toward a state of entropy, collapse, when conditions of sustenance and renewal do not exist. Any system that is a closed system, cut off from new sources of energy will invariably fall into disarray and dissolution. However, the Cosmogenetic Principle suggests how such energy emerges, *neg-entropy*, from apparently nothing, into the structures of galaxies and solar systems, of atoms and molecules in an ongoing evolutionary process, a creative play between underlying *unity* and panoramic *diversity*.

Before scientists discovered cosmogenesis, it was only natural that the second law of thermodynamics would be seen as **the ultimate principle**. No one was yet aware of large-scale form-producing powers that would over fifteen billion years give rise to every structure in the universe... Most central of all, perhaps, is our knowledge that in some sense **the structures of the universe were "aimed at."** (Berry, 69)

The Urantia Book describes this "aim" elegantly:

GOD IS UNITY. Deity is universally co-ordinated. The universe of universes is one vast integrated mechanism which is absolutely controlled by one infinite mind. **The physical, intellectual, and spiritual domains of universal creation are divinely correlated.** The perfect and imperfect are truly **interrelated**, and therefore may the finite evolutionary creature ascend to Paradise in obedience to the Universal Father's mandate: "Be you perfect, even as I am perfect."

The **diverse** levels of creation are **all unified** in the plans and administration of the Architects of the Master Universe. To the circumscribed minds of time-space mortals the **universe** may present many problems and situations which apparently portray disharmony and indicate absence of effective co-ordination; but those of us who are able to observe wider stretches of universal phenomena, and who are more experienced in this art of detecting **the basic unity which underlies creative diversity** and of discovering **the divine oneness** which overspreads all this functioning of **plurality**, better perceive the divine and **single purpose** exhibited in all these **manifold manifestations** of universal creative energy. (57:0.1, 2)

In acknowledging the Cosmogenetic Principle along with the Second Law of Thermodynamics, one becomes aware that the universe, as physicist James Jeans suggests, "begins to look more like a great thought than a great machine." (Jeans, 134) Or, as physicist Arthur Compton suggests:

For myself, faith begins with a realization that a supreme intelligence brought the universe into being and created man. It is not difficult for me to have this faith, for it is incontrovertible that **where there is a plan there is intelligence**--an orderly, unfolding universe testifies to the truth of the most majestic statement ever uttered--'In the beginning God.' (Compton, Chicago Daily News, 1936)

These cosmological principles when taken together reveal the generation, sustenance and metamorphosis of all energy systems. They reveal **an intelligent plan**.

The cosmogenetic principle states that the evolution of the universe will be characterized by **differentiation**, **autopoiesis**, and **communion** throughout time and space.... These three terms — differentiation, autopoiesis, and communion — refer to **the governing themes** and the **basal intentionality of all existence**, and thus are beyond any simple one-line univocal definition. (Berry, 71)

These themes when properly understood help in discerning the orchestration of all existence by a superior source of creativity and intelligence. Einstein described it as if we were little children walking into a great library, whose language is little known or appreciated, that suggests an author. These themes begin to reveal an appreciation of the pathway of every created thing and being. They show how things and beings were meant to be and how they evolve in accordance with universal law, from earthworms to galaxies, from our *personal* engagements to our collective engagements. *Differentiation* expresses diversity and distinction. *Autopoiesis* provides a sense of identity, presence and destiny. *Communion* reveals kinship, unity and interdependence.

Some synonyms for **differentiation** are diversity, complexity, variation, disparity, multiform nature, heterogeneity, articulation.

Different words that point to the second feature of **autopoiesis** are subjectivity, self-manifestation, sentience, self-organization, dynamic centers of experience, presence, identity, inner principle of being, voice, and interiority.

And for the third feature, **communion**, interrelatedness, interdependence, kinship, mutuality, internal relatedness, reciprocity, complementarity, interconnectivity, and affiliation all point to the same dynamic of cosmic evolution. (Berry, 72)

As one meditates upon these themes, one can begin to see how they articulate the journey of every thing and being in creation, thus providing the attributes of a universal ordering principle. They express the splendor of diversity, the great value of interiority and the magnificent inter-connection we have to the story of universal unfolding.

When one meditates on the world of trees, one can see the splendor of *diversity* that surrounds us in our world from tropical palms to the giant sequoias of the Mariposa Grove; one appreciates how it is that a tiny acorn carries within its *subjectivity*, its *interior identity*, the *autopoietic potential* of becoming a great oak tree; one appreciates how within its being there is a *communion and interrelatedness* of all the parts, the body of Christ made manifest in nature itself. One of the seminal inspirations of both Berry

and Swimme is the Jesuit visionary, Pierre Teilhard de Chardin, who underscores the importance of seeing, realizing these principles at work:

On Seeing. One could say that the whole of life lies in seeing — if not ultimately, at least essentially. **To be more is to be more united** — and this sums up and is the very conclusion of the work to follow. But **unity grows**, and we will affirm this again, only if it is supported by an increase of consciousness, of vision. That is probably why the history of the living world can be reduced to the elaboration of ever more perfect eyes at the heart of a cosmos where it is always possible to discern more. Are not the perfection of an animal and the supremacy of the thinking being measured by the penetration and power of synthesis of their glance? To try to see more and to see better is not, therefore, just a fantasy, curiosity, or a luxury. **See or perish**. This is the situation imposed on every element of the universe by the mysterious gift of existence. And thus, to a higher degree, this is the human condition. (Teilhard de Chardin, 3)

Interestingly, the philosopher of India is called a *Rishi* or *Maharishi*, one who sees the splendor of *diversity* in the midst of a mysterious *unity*, as a result of their deep communion with that reality. This seeing empowers the *Rishi* to become the person they were meant to become (*autopoiesis*), to express the gift that they uniquely bear, to manifest the fruits of the spirit. There is a contemplative edge to this principle that allows for such insight, such vision. The great insight of India is that God, Being (*Sat*) is seen through the development of Consciousness (*Chit*), resulting in Unconditional Love, Unfailing Mercy and Matchless Goodwill (*Ananda*).

Personality as Unity, Diversity & Autopoiesis

The themes of the Cosmogenetic Principle also correlate to that grand philosophic assumption, that cosmic reality by which all energy is conducted or orchestrated, personality. Within the domain of personality, there is manifest *diversity*; there is an *auto-poetic dynamic* by which the will of the divine is unique to each created person; and, there is a way in which all personality stands in *communion* with all reality, especially other personalities, as personality is understood in its fullness. In worship, we *commune* with the Father. In service, we *commune*, experience *reciprocity* with all created personalities. The Golden Rule articulates the reciprocal nature of our universe. In some traditions, that rule stands only in relation to other human beings; in Eastern traditions, that rule stands in *kinship* with all created beings in intimate, divine *interrelatedness*.

Diversity expresses the *breadth* of all of things and beings in relation to all things and beings. *Autopoiesis* represents the *length or longitudinal dimension* of all things and beings in their universe journey, while *communion* invites us to the *depth* of our being within the universe. While this is true of all things and beings, it is particularly meaningful in relation to all personal realities.

The finite dimensions of personality have to do with cosmic **length**, **depth**, and **breadth**. **Length** denotes meaning; **depth** signifies value; **breadth** embraces insight—the capacity to experience unchallengeable consciousness of cosmic reality. (112:1.10)

The Cosmogenetic Principle provides the groundwork for a new moral ordering of humanity, one that honors and celebrates the unity that ties together the diversity of humanity. Such seeing allows the person to become part and parcel of a much larger fabric of personal relations.

The premier value of the person is love, which underwrites the intrinsic worth of every person, no matter what one's background. This love is not born of the instinctual urge for sexual reproduction; it is not born even of the desire for mutual respect. It is born out of the realization of the sacred mystery of each and every person, the experience of that holy spark of divinity that exists at the heart of every person. That spark contains the directive, *autopoietic* potentials of the possible person, unrecognized and unappreciated in the dim borderlands of soul, that reality of meaning and character which grows out of the moral choices of the person.

Cosmogenesis as Divine Order, Structure & Organization

Thomas Berry and Brian Swimme write that: Cosmogenesis is *ordered by differentiation* (73), *structured by autopoiesis* (75), and *organized by communion*. (77)

In evolutionary biology, cladistics demonstrates that *ordering* principle within the array of biological diversity. Cell biology shows the *structuring* dynamic of *autopoiesis* at work within the world of DNA. The miracle of the interdependence of all the parts within the body of an organism reveals the intimate panorama of divine *organization*.

Cosmogenesis is **ordered** by differentiation. From the articulated energy constellations we call the elementary particles and atomic beings, through the radiant structures of the animate world, to the complexities of the galaxy with its planetary systems, we find a universe of unending diversity. (Berry, 73)

Cosmogogenesis is **structured** by autopoiesis. From autocatalytic chemical processes to cells, from living bodies to galaxies, we find a universe full with structures exhibiting self-organizing dynamics. (Berry, 75)

Cosmogogenesis is **organized** by communion. To be is to be related, for relationship is the essence of existence. In the very first instant when the primitive particles rushed forth, every one of them was connected to every other one in the entire universe... For galaxies too, relationships are the fact of existence. The loss of relationship, with its consequent alienation is a kind of supreme evil in the universe. (Berry, 77)

The authors use the cell as *the* brilliant example of the Cosmogenic Principle, in its capacity to *commune* with the Sun, gathering the primal unifying energy of the Sun.

Another mutation (**differentiation**) that appeared is one of the greatest acts of creativity in the four billion years of the living Earth. This mutation took the porphyrin ring... twisted it in conjunction with other chemicals (**autopoiesis**) and discovered a molecular net with the power to capture photons in flight. It had the ability to convert the energy of a particle rifling through the air at the speed of light into the molecular structures of food. Suddenly a new intimacy (**communion**) was established between the Earth's living surface and the radiant energy from its central star. (Berry, 89)

The genetic memory of the cell enables single events to take on supreme significance, and thus *autopoiesis* reaches a new level of meaning, allowing the cosmological power of *differentiation* to explode with a trillion new pathways. (Berry, 90, 91)

What we observe is that in our personal relationships, alienation from divine realities-lack of *communion*, is indeed a supreme evil and the source of the tragic dimension of our existence. Meaning emerges when the joy of mutual presence is discovered in the context of our *diverse* relationships, both human and divine, allowing for the discovery of an unfolding *autopoietic* adventure of divine significance.

Whether it is at the level of the finite or absonite, we observe that the journey of all beings stands in deep affiliation with these three principles of cosmogenesis. Outside of these principles the journey is difficult to comprehend. We behold the utter uniqueness of each being as it attempts to articulate its own *autopoietic* individuality and destiny, the will of God.

How Cosmogogenesis Aids in Understanding Absolute Deity

Absolute Deity is best comprehensible in relation to the three principles of cosmogenesis. As the source of Unity, Absolute Deity stands in transcendent relation to all that is finite or even absonite. So much of our confusion around the concept of deity, our relation to deity, is a result of our misappreciation of the nature of deity as absolutely transcendent, perfectly immanent, to all that we are familiar with. Through the lens of Deity as diversity, and diversity as an expression of autopoiesis, we can perhaps trace a path back to an intimate appreciation of the unity of absolute deity. As one theologian has expressed it:

To speak of "God" properly, then is to speak of the one infinite source of all that is: eternal, omniscient, omnipotent, omnipresent, uncreated, uncaused, perfectly transcendent of all things and for that very reason absolutely immanent in all things. God so understood is not something posed over against the universe, in addition to it, nor is he the universe itself. He is **not a "being,"** at least not in the way that a tree, a shoemaker, or a god is a being; he is **not one more object at all.** Rather, all things that exist receive their being continuously from him, who is the infinite wellspring of all that is, in whom all things live and move and have their being. (Hart, 13)

Alluding to Lao Tzu's genesis statement, "Chapter 42" of the *Tao Te Ching*, a Melchizedek writes that:

It has been sometime stated that unity begets duality, that duality beget triunity, and that triunity is the eternal ancestor of all things.... The I AM is unqualified infinity as **unity**. The dualities eternalize reality foundations. The triunities eventuate the realization of infinity as universal function. (105:4.3)

It is time that we begin to meditate on God as so much more than "a being" amongst "other beings." "(T)he unfathomed infinity of original reality" is so much more than our finite minds can conceive and do conceive. (105:1.6) *Much*, very much, of our religious, social and political problems stem from our absolute confusion about deity. "In the minds of the mortals of Urantia... there exists great confusion..." (0:0.1) So much of our confusion stems from our handicapped notions of deity, wherein we drag the absolute being into time and space as another being amongst beings. Since the time of the cultural Enlightenment in the Western culture, we have fashioned deity as a subset of physics, not understanding that physics is in reality a subset of deity. As one theologian put it, God made us in His image and we quickly returned the favor. Through the lens of cosmic consciousness and spiritual perception we should begin to free our-

selves of the limitations of our theological, philosophical, and scientific perspectives. The Cosmogenetic Principle provides an elegant gateway to such insight and understanding, allowing an image of the whole prior to our analysis of the parts.

While “the presence of the Isle of Paradise unifies the domain of physical energy and materializing power” (9:4.1), God the Father *unifies* human personality through the communion of the soul, worship, with the First Source and Center of all creation. Through our service to God’s children, our brothers and sisters, we experience the beauty of the *diversity* of creation.

Jesus encourages each of us to proclaim the living truth:

You are to go forth preaching the love of God and the service of man. That which the world needs most to know is: Men are the sons of God, and through faith they can actually realize (**autopoesis**), and daily experience, this ennobling truth. (193:0.4)

In conclusion, *The Urantia Book* states unequivocally that:

Infinity is on the one hand **UNITY**, on the other it is **DIVERSITY** without end or limit. (115:3.4)

Mortal man is passing through a great age of expanding horizons and enlarging concepts on Urantia, and his cosmic philosophy must accelerate in evolution to keep pace with the expansion of the intellectual arena of human thought. As the cosmic consciousness of mortal man expands, he perceives the interrelatedness (**unity**) of all that he finds in his material *science*, intellectual philosophy, and spiritual insight. Still, with all this belief in the **unity** of the cosmos, man perceives the **diversity** of all existence. (104:3.2)

Science usually advances by a succession of small steps, through a fog in which even the most keen-sighted explorer can seldom see more than a few paces ahead. Occasionally the fog lifts, an eminence is gained, and a wider stretch of territory can be surveyed—sometimes with startling results. A whole science may then seem to undergo a kaleidoscopic rearrangement, fragments of knowledge sometimes being found to fit together in a hitherto unsuspected manner. Sometimes the shock of readjustment may spread to other sciences; sometimes it may divert the whole current of human thought. (Jeans, *Physics and Philosophy*, 217)

We may be bold to ask in conclusion what keeps it all together, physical, intellectual and spiritual circuits, the unity of universal diversity. At the beginning of “Paper 56, Universal Unity” we read that “God is unity.” (56:0.1) At the end of that paper we read that “the advanced mortals on a world in the seventh state of light and life have learned that love is the greatest thing in the universe—and they know that *God is love.*” (56:10.20)

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