Teilhard and the Texture of the Evolutionary Cosmos

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Jesuit Paleontologist, Pierre Teilhard de Chardin developed a synthetic view of the cosmos by integrating evolutionary theory with his Christian beliefs. To effect this synthesis, he made abundant use of scientific imagery. Sometimes subtle, this imagery is taken mainly from physics but comes also from chemistry and biology. At times his images even seem to allude to modern developments in science such as chaos theory, complexity theory, and superstring theory. This lecture will explore Teilhard’s integrating thought and spirituality by focusing on one of Teilhard’s scientific metaphors, “the cosmic tapestry.”

Our Part in the Cosmic Tapestry

We are made up of all sorts of fibres . . . each with its own history and life. (Activation of Energy, p. 188) Each of these fibers runs through each one of us, coming from below us and rising higher, so that for each one of them the story . . . of its entire evolution could be told: the evolution of love, the evolution of war, the evolution of research, the evolution of the social sense. (Human Phenomenon, 121)

We live at the centre of the network of cosmic influences as we live at the heart of the human crowd or among the myriads of stars, without, alas being aware of their immensity. (Divine Milieu, 58)
Each [one of us] is to some degree the centre of the entire Cosmos, resting upon and at the same time supporting its fabric. (Writings in Time of War, 208) How . . . slender are the threads from which my existence is woven, extending from the initial starting-point of the cosmic processes right down to the meeting of my parents . . . Had but a single one of those threads snapped my spirit would never have emerged into existence. (W, 228)

The change brought about in our experience by what we . . . call space-time essentially consists in this: everything that we regarded and treated . . . as points in our cosmological constructions has become the momentary section of indefinite temporal fibers . . . To our opened eyes every element of things prolongs itself behind us (and tends to continue on ahead) as far as the eye can see. So that the whole immensity of space is no more than the slice "at time t" of a trunk whose roots plunge down into the abyss of an unfathomable past, and whose branches rise somewhere ahead in a future that, at first sight, seems boundless. (HP, 17)

And so for the first time in my life perhaps . . . I took the lamp and, leaving the zone of everyday occupations and relationships where everything seems clear, I went down into my inmost self, to the deep abyss whence I feel dimly that my power of action emanates. But as I moved further and further away from the conventional certainties by which social life is superficially illuminated, I became aware that I was losing contact with myself. At each step of the descent a new person was disclosed within me of whose name I was no longer sure, and who no longer obeyed me. And when I had to stop my exploration because the path faded from beneath my steps, I found a bottomless abyss at my feet, and out of it came - arising I know not from where - the current which I dare to call my life. (Divine Milieu, 76)

Crimson gleams of Matter, gliding imperceptibly into the gold of Spirit, ultimately to become transformed into the incandescence of a Universe that is Person - and through all this there blows, animating it and spreading over it a fragrant balm, a zephyr of Union - and of the Feminine. (Heart of Matter, 16)

New Teilhard Studies Editor

We are pleased to announce that Kathleen Duffy has agreed to become the new editor of the Teilhard Studies series of the American Teilhard Association.

The previous editor, Donald St. John, professor of theology at Moravian College in Bethlehem, Pennsylvania, has dutifully served since 1994. During this time, a collection of Studies of which Dr. St. John was co-editor was published as Teilhard in the 21st Century (Orbis Books, 2003). This volume was chosen by the Catholic Press Association as the best paperback spirituality book of the year, and has just been reissued in its third printing. We send our sincere thanks to Don for his tenure and contribution.

It should also not pass notice that the Teilhard Studies semi-annual pamphlet was initiated in 1978 by Thomas Berry and Donald Gray. The first editor for six years was Dr. Gray, professor of theology at Manhattan College. Arthur Fabel then had the privilege to be editor from 1984 to 1994. The series has proceeded apace for some forty years and is a credit to its founders and to the Association.

Two Meetings in Pisa, Italy on Teilhard de Chardin and the Dialogue among Cultures.

Lodovico Galleni and Silvana Procacci

This note was sent to me by Lodovico as a summary of a December 2006 conference whose program was listed in the previous Perspective: Science and Theology: Teilhard de Chardin Universal Thinker, and of a February 2007 meeting: Building the Earth, Rebuilding Lebanon. The program for the latter event is also included below.

To follow up on the perspectives opened by the congresses and meetings honouring the 50th anniversary of Teilhard de Chardin’s death, two meetings were organised in Pisa, Italy to further develop these themes and urgencies of the dialogue among religions and cultures. Both the meetings were supported by grants obtained from the Pisa provincial presidency, the Caterinianan Library, the Metanexus Etruscan Local society, and the University of Pisa.

The first meeting held in December 2006 (along with a grant from the Pisa Cathedral Vestry Board) was dedicated to a general synthesis of Teilhard de Chardin visions both as a scientist than as a man of faith. The title was: “Science and Theology: Teilhard de Chardin Universal Thinker - An Anniversary Balance (1955-2005).” Teilhard was once more appreciated as one of the key persons to understand the development of the Roman Catholic tradition bringing to the
Vatican the Second Council. On the other side the new researches regarding his scientific contribution allow to present him as one of the most outstanding evolutionary biologists of the last century. Moreover from his works it was possible to develop a multicentric model of interactions between science and theology.

In any event, two words that could summarize the works of the meetings were: *dialogue and hope*. The Bishop of Pisa, Mons. Plotti, opened the meeting with an analysis of Teilhard’s *Milieu divin*. Conversations with contemporary science then involved evolution in its Darwinian explication with the aim to refute scientific creationism and intelligent design. An extensive discussion took place regarding proposals to understand biology as the science of living complexity, of parallelisms and canalisations as main aspects of evolution studied at the continental level, and the necessity to develop a science of the Biosphere. The hope is that groups of scientists will start in the future working on Macroevolution so as to expand Teilhard’s scientific research programs.

Finally dialogue among cultures took place. A consideration of Africa was enhanced by the writings in the 1960’s by the president of the nation of Senegal, Leopold Sedar Senghor, who drew much on Teilhard’s organic, life-affirming philosophy. The dialogue with India took place thanks to the perspective opened by the theologian Jules Monchanin,. The course of active action in Latin America noted the martyrdom of Dorothy Stang, a sister of the order of Notre Dame of Namur, who supported the Amazonian native populations as an example of building the Earth in *Christo Jesu*. Another example was the use of Teilhard de Chardin’s spirituality in the clandestine church of the Czech Republic of the communism years. This speech was given by Ludmila Javorova in memory of Bishop Felix Davideck. Finally, an exploration of integrating the thoughts of Teilhard with those of Hans Jonas and Michael Polanyi was presented.

The second meeting was held the 24 of February 2007 and it was a common meeting between the Metanexus Local Society: Etruscan Local Group (Universities of Pisa, Perugia, della Tuscia) and the Metanexus Local Society: Lebanon Communio Study Circle ( Notre Dame University - Zouk Mikael – Lebanon). The title was: Building the Earth, rebuilding Lebanon: Pierre Teilhard de Chardin and Giorgio La Pira, a Perspective for the Future. It was dedicated to the presentation of the papers of Teilhard de Chardin and of the Italian politician Giorgio La Pira, formerly mayor of Florence and an exponent of Christian Personalism, to look for the possibilities of a translation of texts of these authors into Arab language as tools for the dialogue with Muslim cultural colleagues. As an example of such dialogue, a professor from the School of music Bonamici of Pisa: Luca Brunelli Felicetti, presented on the influence of Arabic music on medieval Christian liturgical music.

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**Building the Earth, Rebuilding Lebanon**

**Pierre Teilhard de Chardin and Giorgio La Pira, a Perspective for the Future**

**Sponsors:**

- Hall of Pisa Provincial Administration
- Biblioteca Cateriniana- Pisa
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- Compagnia di Santa Bona – Pisa
- Metanexus Local Society: Etruscan Local Group (Universities of Pisa, Perugia, della Tuscia)
- Metanexus Local Society: Lebanon Communio Study Circle ( Notre Dame Univ. - Zouk Mikael – Lebanon )

With the cooperation of the Pisa Dept. of Ancient and Medieval music, Giuseppe Bonamici school of music

**Presentations:**

- Lodovico Galleni (Università di Pisa) Teilhard de Chardin and the Perspective of the Future of the Noosphere
- Giulio Conticelli (La Pira foundation - Florence) La Pira and Abraham Progeny

- Edward Alam (Notre Dame University - Lebanon) The Future of Lebanon: Philosophical Reflections on "Hope" with references to Teilhard de Chardin and Gorgio La Pira.

- Eugene Sensenig-Dabbous (Notre Dame University - Lebanon) "Alternative Salvations: Marxist and Christian Labour Responses to Violence and Social Injustice in the 20th Century"

Orthogenesis 2007

A Worldwide Humankind Begins to Confirm
Life’s Phenomenal Emergence of Complexity and
Consciousness

If one word could represent Teilhard’s evolutionary
vision, it might be orthogenesis, a school of thought of
which he has been an exemplar. The term originated circa
1900 to distinguish the prevalent view, some 40 years after
Charles Darwin’s The Origin of Species, of a progressive
organic development from microbes to man. Such an
oriented ascent along a preferred, axial path, akin to a
quickening embryo, was further attributed to an internal
drive, an “clan vital,” a creative “within of things.”

But around 1950, this animate vision with roots from
Aristotle to Romantic Naturphilosophie was replaced by the
Modern Synthesis as a meld of Darwin and Gregor Mendel.
But this school has henceforth reduced evolving life and
human to the unintended result of random gene mutations
and aimless, winnowing selection. Any motive force was
banished because its mechanistic scheme was unable to
admit and perceive it.

In the first decade of the 21st century, a grand new
understanding of an expanded evolution is just coming
together, which this note will survey, that promises a novel
verification of Teilhard’s prescience. Biologist Ludovico
Galleni mentioned the need to pursue this project in his note
on page 3. After setting its historical context, the past
decades of biological theory are reviewed as a prelude for a
nascent genesis cosmos which organizes itself as a
developing organism. And this will require a reference to
Teilhard’s cerebral Noosphere for its full appreciation,
which appears to be lately reaching its own knowledge as if
a planetary person. A salient 2007 work, among others,
which specifically revives orthogenesis and prompted this
piece, is Biological Emergences (MIT Press) by University
of Victoria biologist Robert Reid. The Natural Genesis
website can provide many more annotated resources in
support.

An Historical Background

Until mid 20th century, biology textbooks allowed that life
can apparently evolve with an essential progression. The
cultural milieu in Britain and Europe in which Darwin
thought and wrote in the early 19th century was enamoured
with a general affinity, a recapitulation, between the course
of individual ontogeny and evolutionary phylogeny. Such a
sentiment is evident, e.g., in Julian Huxley’s evolution tomes
into the 1960s, who was a strong advocate of Teilhard. But
an issue with orthogenesis has been a number of usages due
to various authors. Some attributed it to acquired
Lamarckian traits, while others held to a final, teleological
inevitability.

Teilhard’s view, open to misconstrual, is instructive and
quite current. As he notes in The Future of Man, (164) a
genetic “play of chance” indeed occurs but is secondary to
the innate propensity of a genesis universe to create a
tandem axis of somatic complexity and knowing
consciousness. Nested spheres arise from atoms to societies
to convey a directional, but surely not linear progress. Here
is a traditional “doubleness” of an independent, universal,
impute source from which springs an explicate, manifest
scale of being and becoming, today as dual realms of
genotype and phenotype. But such a reading is more than
another theory or opinion. It infers a discovery of a greater
abiding creation with its own developmental unfoldment, of
which human beings are a pivotal phenomenon.

The neoDarwinian modern synthesis grew out of DNA
double helix advances in quantifying genetic influences on
bodily forms. However, this albeit necessary turn to
biomolecular reduction, along with a fossil-based
palaeontology, has coalesced into an evolutionary theory that
denies and excludes any plan and purpose. Darwin’s
original penchant was set aside and he was misappropriated
as a Newtonian mechanic, a museum icon of an insensate,
contingent biota.

In this regard, the rancorous standoff between so-called
Intelligent Design and this Darwinist scheme, fought in the
courts and media, illustrates the dichotomy. ID proponents
such as Michael Behe depict cells as tiny machines with
gear-like parts and claim life is so intricate that Divine
intervention is required, a flawed attempt to recover some
modicum of intent. Many Americans, including presidential
candidates, do not believe in evolution at all. While the
proof of earth life’s billion year course from the primal slime
to the Bush administration is not a matter of belief but rests
upon myriad collaborative explorations, observations and
experiments, it has been taken to unwarranted ends. Steven
Jay Gould, Richard Dawkins, Daniel Dennett, and company
employ their literary skills to drain any sense of inherent
orientation or aim. Selection alone rules, while an augury
life pulse is banned. For all their erudition, they can’t see
what is wrong with trashing religions, however fraught, with nothing palliative to offer in their stead. But the dearth of hope goes deeper for the encompassing universe is similarly pronounced dead by a male, materialist physics. The latest string theories declare the extant cosmos to be a rarest improbability amongst an infinity of vicarious options. Typical new books are titled From Clockwork to Crapshoot (Roger Newton) and Cosmic Jackpot (Paul Davies). Life thus appears as an alien, inconsequential, tangent. No wonder that religions bridle at these secular paradigms, so skewed to look down into matter, back in time, and out into space that life and love vanish. An unresolved clash of cosmologies, largely unnoticed, lies at the base of our global travails. And there is a perceptual, structural reason for our dilemma. A 21st century genesis vision, if cast in the other direction toward whom may be conceived, is not occurring due to one man as before. Rather, this discovery is being achieved today by a worldwide humankind as the fulfillment of the sphere of cognitive reason that Teilhard, Vladimir Vernadsky, and Edouard Le Roy jointly foresaw. Under the finite networked compression of a round earth, human beings converge and emerge into a super-organic entity, while retaining an actually enhanced liberty. As a result, a global bicameral brain envelopes which could be seen at the verge its own thought and cognizance. Such a vista could bring a vital new realm of common, discursive reason that we so need. That is to say, millions of researchers now work away in some special area, be it galactic clusters, supramolecular chemistry, or coral ecosystems. If one might gather their findings altogether, which is the premise of the Natural Genesis website, a quite different universe and evolution could be discerned, a cosmic Copernican Revolution to an oriented, personal gestation, a child of the parental creation. Please also view the slide show Cosmic Genesis in the 21st Century accessible from the home page of the above portal.

A Worldwide Discovery of a Creative Organic Universe

I have been engaged for some time in a conversation with Guy Hoelzer, a biologist at the University of Nevada, and presenter at the 2006 Star Island Emergence week. Like Robert Reid, he is trying to reconceive life’s evident advance in terms of complex system principles. We meet at a biannual complexity conference in Boston and agreed in 2002 and 2004, not yet. But last summer at the Isle of Shoals, where Stuart Kauffman also spoke, we felt that a decisive shift is taking place across the scientific community to recognize and include a self-organizing dynamics at work prior to selection which impel and channel a progressive evolutionary development of organisms and societies. This epochal revision, as yet unnoticed, was much initiated by polymath Kauffman with his 1993 volume The Origins of Order: Self-Organization and Selection in Evolution. But he has not received a Nobel Prize in Biology because there isn’t any, for nature is seen as physical or mechanical in kind. Increasingly in the meantime, the resultant effects of this fertile materiality such as life’s multilevel nest, its pervasive modularity, ubiquitous complex adaptive systems, recurrent networking, autopoietic symbiosis, and so on, are implying an essential genesis reality. While species do spawn many offspring that are environmentally selected for survival, this later phase is secondary to these endemic generative influences, unknown to Darwin and the modern synthesis. And the universe also needs to change. Rather than life appearing furtively in an inhospitable barrenness, a biologically conducive cosmos is likewise awaking. Whereas neuroscience, biology, and even chemistry, have commenced a “systems” reassembly of the parts they found, physics remains stuck in subatomic depths as evidenced by the ten billion dollar Large Hadron Collider to look for “WMD”-type particles that aren’t there. Nature’s amniotic procreative impetus won’t be found in such a device, nor contained in a particular “theory of everything.” Yet its presence is clearly “everywhere” as our worldwide cerebration fills in and discovers a quickening genesis. In the 1980s scientists began to detect, equate and realize that nature is indeed suffused by regular mathematical patterns and processes, energies and topologies. The advent of personal computers with graphic video displays played a large part. Darwin’s famous “tangled bank” became amenable to study as an intricate ecosystem. In the time since, this research into Teilhard’s “third infinity” after atom and cosmos of life’s cognitive complexity took parallel paths of unity and diversity.

As sciences investigates realms from galaxies to genomes and biosphere Gaia, the apply of dynamic systems principles has brought a herefore elusive theoretical explanation. Many endeavors such as nonequilibrium thermodynamics, autopoiesis, epigenetics, paleoecology, archeology, microbiology, linguistics, anthropology, and so on, mostly isolated from each other, have filled in universe and human to an extent that the same creative phenomena are found to recur at every strata and exemplary instance. From these breakthroughs, as documented, in Part IV, A Cosmic Code, and Part VI, Earth Life Emergence, of the Natural Genesis site, can be distilled a common, universally evident complex adaptive system. In its abstract terms many autonomous agents, (prokaryote microbes, social insects, financial investors) are engaged in constant local interaction, guided by tacit norms or rules. As this activity proceeds, entities differentiate and combine into specialized modules, each bringing a certain quality. Neural-type networks grace, shape-shift, in an informative way from life’s autocatalytic origins to the intensifying Internet. As densities compress, a bounded unit emerges via symbiotically joined complements of individual and group, such as a walled cell or corporate culture. At a certain threshold, as Teilhard foresaw, a higher whole appears such as eukaryote cell, fish school, or ecovillage community. There are several discoveries by a nascent mindkind that now beg recognition. A “universality” is achieved because the same generative, self-creating structure and dynamics repeat over and over everywhere. Moreover such a scale-invariant, fractal-like similar repetition from microcosm to macrocosm implies an independent, creative source from which it occurs. Our global science thus finds, for reference, Thomas Aquinas’ analogy of proper proportion, the correlative yin/yang complementarity of Chinese wisdom,
the prism that Islam could be, a modern Neoplatonic interplay of energy and emanation. And for agent and relation, node and link, read masculine and feminine principles. The banished immanence returns anew as a 21st century informative agency, acorn to oak to acorn, word to flesh to sustainable spirit.

A Genesis Evolutionary Synthesis

In this brief note, we can now look closer at the evolution revolution. The salient difference is to place an intrinsic self-organizing impetus before any selection effects. Its evidential presence can be noted across genetic, developmental, metabolic, ecological, and cultural fields as each moves into an integral systems mode. But this epic revision is no longer due to a Newton or Darwin. Via a worldwide scientific community, it is occurring by millions of contributions or puzzle pieces, which if put altogether serve to reveal a genesis universe. Indeed science itself embodies a complex adaptive system as multitudes of researchers conduct detailed studies through local communication and critical refereed publication, guided by strong protocols, from which arises without central direction, often unbeknownst, a holistic discovery.

For just one case, I have recently heard Penn State University biologist Kenneth Weiss speak about the presence of “invisible general principles” beyond a Darwinian compass, whose “algorithmic iteration” serves to spawn a “nested serial homology” (repetition in kind) from nonlinear DNA to physiology, cells, organs, and species. To further illustrate this widespread ferment we next gather diverse citations from the Natural Genesis website.

Our basic claim is that biological thinking about heredity and evolution is undergoing a revolutionary change. What is emerging is a new synthesis, which challenges the gene-centered version of neo-Darwinism that has dominated biological thought for the last fifty years. Eva Jablonka and Marion Lamb. Evolution in Four Dimensions. 2005.

Biologist now need to reformulate their view of evolution to study it in complex dynamic-systems terms. Translationally produced proteins, multicellular organisms, and social structures are each the result of, emerge from, fields of interaction when the latter attain a certain degree of complexity and specificity. Carl Woese. A New Biology for a New Century. 2004.

This endeavor will involve, first, an encounter with the long revolution in human thought and scientific understanding which has gradually been building in the twentieth, and now twenty-first centuries: the revolution that is taking place in the scientific paradigm shift from ‘The Age of Reduction’ to ‘The Age of Emergence.’ Wendy Wheeler. The Whole Creature: Complexity, Biosemiotics and the Evolution of Culture. 2006.

With the advent of inexpensive, high-powered computers in the 1980’s, scientists began to make rapid progress in understanding complex adaptive systems in the natural world and to see such systems as forming a universal class, with many common behaviors. In fact, many biologists have come to view evolutionary systems as just one particular type, or subclass, of complex adaptive systems. Eric Beinhocker. The Origin of Wealth: Evolution, Complexity, and the Radical Remaking of Economics. 2006.

Specifically, a complex adaptive system (CAS) is characterized by the presence of a diverse ensemble of components that engage in local interactions and an autonomous process that selects a subset of those components for enhancement based on the results of the local interactions. Ndifon, Wilfred. A Complex Adaptive Systems Approach to the Kinetic Folding of RNA. 2005.

As a result, evolution has come to be modeled as an intrinsically stochastic and (nonlinear) dynamical system in which a population of structured individuals, monitored as a set of genotypes, diffuses through the space of all possible genotypes. The diffusion is far from random, but instead is driven by genetic developmental processes and selection according to phenotypic fitness, for example. James Crutchfield and Peter Schuster, eds. Evolutionary Dynamics. 2003.

According to the enactive viewpoint, natural selection is an emergent consequence of auto-poiesis, not its cause. According to the viewpoint I am proposing, self-organization and natural selection are not opposed but are actually two interwoven aspects of a single process of enactive evolution. Evan Thompson. Mind and Life. 2007.

Not surprisingly, most origin-of-life investigators favor the view that life is a cosmic imperative and that it is only a matter of time before we figure out how it happened. In this scenario, genesis occurs throughout the universe all the time. (xiv) The theory of emergence points to a gradual, inexorable evolution of the cosmos, from atoms to galaxies to planets to life. Each emergent step arises from the interactions of numerous agents and yields an outcome much greater than the sum of its parts. (245) Robert Hazen. Genesis. 2005

Over the last decades of the twentieth century the shortcomings of the reductionist approach had become increasingly apparent, and at some point a new type of integrative biology began to emerge. These theories suggest that basic, universal laws of organization shape the large-scale architecture of biological systems. Ricard Sole and Jordi Bascompte. Self-Organization in Complex Systems. 2006.

Inherency is a second general property of evolving systems. It complements the contingency emphasized by the neo-Darwinian side of evolutionary theory. Emergence and inherency represent those generative principles that are missing from the standard evolutionary framework and which are now in the process of being incorporated into a more complete theory. Gerd Muller and Stuart Newman. Journal of Experimental Zoology. 2005

Our hypothesis is that besides the aggregate gene pool and the constraining external morphological power of natural selection, there is an internal morphological function of self-

A striking feature of nature is the existence of common themes that recur over and over in fundamentally different systems. Werner Callebaut and Diego Rasskin-Gutman, eds. Modularity: Understanding the Development and Evolution of Natural Complex Systems. 2005.

These quotes, along with many more, remind one in their essence of The Human Phenomenon. An immediate benefit is to supplant the old “tree” of life metaphor, which began with a central trunk, but has lately grown to a branching bramble sans any intelligence increase. In its stead is the characteristic structural result of a generic self-organization as a ramifying nest of whole within wholes. Bacterial colonies composed of responsive members, informed by chemical “quorum sensing,” differentiate and form modules for mutual advantage, which further specialize and join into a cellular vesicle. Cooperation for viability overtakes competition. The process repeats in phylogeny and ontogeny as nucleated cells combine into organelles, multicellular organisms, and social groupings. Divergence, convergence, and emergence, a diversity in unity, reiterates at every stage.

A current term to evoke this embryonic procreation is Emergence. So far we have been concerned with its skeletal complexity. But what is often not noticed and conflated is that this embodiment serves the ascent of an immaterial cognitive quality. Larger brains as encephalization, their relative cognizance, active behavior, proto-language unto reflective consciousness, then trace an Ariadne’s thread of meliorative, sequential gestation, in sum rightly an orthogenesis. While bodily complexity among mammals may not show an overt trend, a distinct tendency, preference, dare one say arrow, for cerebral acumen and relevant knowledge is broadly evident. For the Modern Synthesis, due to its emphasis on genes and bones, this defining procession quite lies outside its purview.

A recent supplement to the Proceedings of the National Academy of Sciences (Volume 104) (Google journal to access) of papers from the “In the Light of Evolution: Adaptation and Complex Design” colloquium reflect the present situation. Its aim was to show how a vested Darwinism remains adequate to explain the evolutionary intricacies of cellular and corporeal organisms. A gradual population drift of chance variations adapting to environments is said to be sufficient. Although these effects may impose relative trends, they have no aim. Yet its distinguished presenters in fact now describe life’s procession in terms of modularity, networks, symbiosis, levels, structural constraints, functional information, complex systems, cooperative altruism, division of labor, and so on. Which is just what one would expect to find if a self-organizing dynamics were at work. But the old paradigm, along with an equally compromised physical universe, all without philosophical guidance, does not permit a theoretical breakthrough. As an aside, the issue title is from Theodosius Dobzhansky, who actually endorsed, as noted in the previous TP, a Teilhardian evolutionary vista.

We can only broach, to be continued. As a latter dark age collapse now threatens, a 21st century cosmic genesis synthesis might promise a dawning light age. By whatever initiative, venue or project, in a race between disaster and discovery, might we greatly abide, think and work together?

Whitehead and Teilhard

In July 2006 at Salzburg University, Austria, an international conference was held to discuss all aspects of Alfred North Whitehead’s luminous thought of organic and mindful processes of cosmic emergent creation. Its three main sections of Philosophy, Religion and Science with speakers, abstracts and some full papers can be accessed via Google with the words “Whitehead Salzburg.” Many thanks to ATA member and Teilhard Study author Herman Greene for bringing this event to my attention. We reprint the abstracts of papers from the Teilhard section.


Donald Viney. Professor of Philosophy, Pittsburg State University, Kansas.

Teilhard de Chardin became a philosopher in spite of the Church. Try as he might to present his views as “hyperphysics” the censors realized that his extensions of scientific inquiry were unavoidably metaphysical and that his views were not compatible with the Thomistic philosophy in which Catholic theology was expressed. Teilhard eventually realized the impossibility of insulating his scientific views from their metaphysical implications. In his final paper he noted that he had been warned throughout his adult life not to mix philosophy and theology with science. Fifty years of experience, however, taught him that his attitude is “psychologically unfeasible” and “opposed to the greater glory of God.” Teilhard distrusted traditional metaphysics because, as he said, “I smell a geometry in it.” Nevertheless, he explicitly entertained the idea of an open ended metaphysical inquiry that analysis reveals to be the same as his hyperphysics. His “metaphysics of Union,” is a version of process metaphysics that is at odds with Thomism. That he understood this is evident from his candid criticisms of Thomism, notwithstanding his statements that a “transcription” of his views into more traditional categories is possible.

Teilhard de Chardin, A. N. Whitehead and a Metaphysics of Intersubjectivity.

Joseph Bracken, SJ. Professor Emeritus of Theology, Xavier University, Cincinnati

If Whiteheadian societies be understood as structured fields of activity for their constituent actual occasions, than a
combination of the theological insights of Teilhard and the philosophical categories of Whitehead could result in a new understanding of the God-world relationships as a cosmic community of subjects of experience (divine and createurally) in dynamic interrelationship. That is, from Teilhard one could draw the insight that God is tripersonal rather than unipersonal, hence that god is not an individual subject of experience in ongoing dialectical relationship with created subjects of experience (as in Whitehead’s own scheme) but rather a community of divine subjects of experience who make a “space” within their own divine intersubjective field of activity for the emergence of created subjects of experience. Hence, instead of the implicit dualism between God and the world in Whitehead’s scheme, one has in hand a panentheistic understanding of the God-world relationship. The world of creation exists within God but is still distinct from God in terms of its own createurally existence and activity.

**Preface To The Dictionary Of The Works Of Teilhard De Chardin**

*We reprint with permission the Preface by Richard Brüchsel, SJ.to this large new volume* (Verona: Gabrielli Editori, 2006.) *meticulously prepared by Fabio Mantovani and noted in the previous Perspective. Fr. Bruchsel is an esteemed Teilhardian scholar based in Bern, Switzerland.*

Today the peoples of the world are drawing nearer and nearer because of the Earth’s limited surface area and the relentless population increase. There are rapid and numerous means of transport, while electronic communications permit instant contacts. The future promises unlimited further developments. All these measures have been created by human beings because of their unsuppressible instinct of being in close contact. From where does such a natural inclination arise, in what context should it be viewed and, finally, where will it lead us?

Teilhard de Chardin, during his lifetime (1881-1955), tried to answer these questions. From when he was a young Jesuit - in one of the final essays of his philosophical studies (1905) - he had expressed the desire to understand the true nature of material beings: “La véritable allure des êtres matériels” (*Œuvre scientifique*, Walter 1971, p. 30). Since he was convinced that physics and biology had not yet provided an exhaustive explanation for this question, he set about describing the transformations of material things, starting from the perspective of Aristotelian-Thomistic philosophy. From an in-depth study of the problem, Teilhard showed that, in the course of evolution, the initially scattered mass of matter became progressively more unified in “increasingly more complex and conscious units,” finally reaching its present culmination, on our planet, in the most complex and conscious “form” of Man. Thanks to the development from consciousness to self-consciousness, we

**Panentheism or Transpantheism? The Process of Trans-Unification in Teilhard and Whitehead**

*Roland Faber  Professor of Process Theology, Claremont School of Theology*

Today, both Teilhard de Chardin and Whitehead are firmly seen as panentheists. Nevertheless, their panentheism not only seems to differ from similar concepts of “being one in God, who is more than the World God unites” but differ precisely in not integrating the World into God while being always (a priori) “in” God, but by insisting on the World’s transcendence of God as God’s insistence on its creative existence “beyond” God. I will investigate this mutual transcendence of God and the World in terms of Teilhard’s kenotic difference and eschatological duality of God and the World and Whitehead’s suspension of any ultimacy in the process between God and the World, both of which I understand as forms of “transunification,” which, rather that to indicate “Panentheism” I shall call “Trans-Pantheism.”

...
avant, in this Omega Christ. Everyone may then collaborate in the grand process of Becoming. We will not be alone in undertaking this task, since the Omega destiny extends, over everything, the creative influence of the Cosmic Christ, a Milieu Divin which draws us and urges us to carry out free and autonomous actions, as we advance “feeling our way” (“en tâtant”): “He acts so that Things accomplish themselves” (“Dieu fait que nous pouvons nous faire”). The posthumous publication of Teilhard’s works was aided by the fact that his perspective is pervaded by hope and provides meaning.

In order to spread it and study it in depth, Associations, analogous to the Association des Amis de Teilhard de Chardin of Paris, have arisen in various countries. At the suggestion of a 1989 International Congress, a European Teilhard Centre was established in Strasbourg, at which there are annual reunions of the Presidents of the Associations of Belgium, France, Germany, Great Britain and Italy. In such a group, I have, from the outset, as a Swiss Jesuit and expert on Teilhard de Chardin, acted as spiritual adviser. I have therefore had the opportunity of getting to know the then President of the Italian Teilhard de Chardin Association, Fabio Mantovani. In different meetings and conversations, also outside the group, we discovered a convergence of opinions and perspectives. On account of this close collaboration and concurrence of views, I was invited to write this preface for his Dictionary, for which I would, here, like to express my appreciation.

In analysing the true nature of material beings, Teilhard created philosophical concepts and neologisms which are not always easy to understand. His first biographer, Claude Cuénot, drew up a dictionary of Teilhardian terms, Nouveau Lexique Teilhard de Chardin, éd. Seuil, 1968. I also consider of particular importance the Teilhard de Chardin Lexikon, Herder 1971, published by the German Jesuit and nature philosopher, Adolf Haas. Fabio Mantovani now offers the “Dictionary of the Works of Teilhard de Chardin,” in which he presents, in chronological order, the individual writings, highlighting the most important concepts. Both those who have an expert knowledge of his works and those who wish to become acquainted with Teilhardian thought will greatly appreciate this Dictionary, which I hope will be very widely read.

And there is an urgent need for this Dictionary. In light of the development of quantum physics, modern genetics, and many other fields, the ever-more detailed knowledge of the universe, along with the growth of social psychological studies of humanity’s evolution, Teilhard’s works acquire a current significance and importance. His vision of the past, his vision of the future and the spiritual doctrine of the Milieu Divin are in fact vital sources of inspiration and guidance. Naturally, some of the things Teilhard wrote will be formulated differently and better; as he himself used to say: “They will only understand me when I will be outdated.”

In our art museums, very many people love and contemplate the paintings of the Impressionists. The artists of that period were attracted to the open air by Nature, in order to capture the light of its colours, as if a divine action were to release glittering rays from its depths. Teilhard, who lived at the time of the Impressionists, identified that brightness with Christ, the Light of the World. With the aim of correlating earthly things with Christ, Teilhard sought to organize them on the phenomenological plane, as Cézanne used to do with his paintings. Teilhard made use of the Theory of Evolution and situated Christ, in relation to the World, in the so-called Omega Point. It is from here that He operates in the World, drawing it to Himself in order to achieve a new Unity. The dramatic force we perceive as being connected with this process of unification - as we are living it today - will drive 21st century readers of Teilhard’s works beyond the peaceful images of the Impressionists to new salutary illuminations.

The Evolutionary Epic
Science's Story and Humanity's Response
2008 Conference

We are pleased to make notice of this apropos gathering to be held at the Makaha Resort, Waianae, Oahu, Hawaii on January 3-8, 2008. As organized and hosted by astronomer Russell Genet and science educator Cheryl Genet, the following description avers a special occasion for body, mind and soul at one of the most awesome ecological settings on the planet. Please Google the conference title for its informative website, from which we abstract here, along with a sampling of the program and speakers.

Science's Story
Cosmic Origins to Diverse Life
The Evolution of Animal Sociality
First Hominids to Civilizations
Machines, Science, and Globalization

Humanity's Response
The Epic as Story and Art
The Epic and Education
The Epic, Spirituality, and Religion
The Epic, Humanity, and Planet Earth

The Evolutionary Epic is the science-inspired story that starts with the Big Bang and ends at the present with complex beings on Earth who understand who they are and how they came to be. The Epic is science because, at its core, it provides a naturalistic explanation and adheres to well-accepted science. The Epic is story because it takes an art form—story telling—to weave the fundamentals of physical, biological, and cultural evolution into easily understood, humanly engaging, culturally-imbedded narratives. Besides being science and story, the Epic is also education. An understanding of the Evolutionary Epic can weave many otherwise disparate courses of study together. And the Epic is spiritual, even religious, because the Epic—
and the cosmos it embodies—elicits awe and reverence, and is seen by many as God’s way of implementing a divine plan. Finally, the Epic is humanity and Earth—the sudden dominance of a sentient species and all that implies for the planet.

The Epic conference will be attended by scientists, artists, educators, and spiritual and religious leaders. The scientists will provide the facts and theories behind the story. The artists—writers, video producers, playwrights, painters, and musicians—will explain and demonstrate how the epic can be portrayed in a variety of humanly attractive and meaningful ways. The educators will provide examples of how they have utilized the epic as an educational framework—as an organizer and high level schema. The spiritual and religious leaders will explain how the epic has, is, and will be, integrated within humanity’s diverse cultural traditions—each with its own unique vocabulary and story renditions. Finally, a number of participants will suggest how the telling of the Epic can contribute to the sustainability of life on planet Earth.

INAUGURAL SPEAKER - BRIAN SWIMME -
Professor of Mathematical and Evolutionary Cosmology,
California Institute for Integral Studies

Walter Alvarez - Professor of Geology University of California Berkeley

Daniel Botkin - Emeritus Professor of Ecology Evolution & Marine Bio, Center for Study of Environment, University of California, Santa Barbara

David Christian - Professor of History California State University, San Diego

"History Complexity and the Chronometric Revolution"

Chris Corbally, SJ - Astronomy, Vice Director- Vatican Observatory, Tucson AZ

"An Astronomer’s Faith within an Evolutionary Cosmos"

Peter Corning - Institute for the Study of Complex Systems, Friday Harbor WA

"Holistic Darwinism: Beyond the 'Selfish Gene"

Cheryl Genet - Director, Orion Institute and its Science and Theology Project, Santa Margarita CA

Session Chair: “The Evolutionary Epic Religion and Spirituality: Enriching One Another”

Russell Genet - Professor of Astronomy and Cosmic Evolution, Cuesta College; Director, Orion Observatory, San Luis Obispo, CA

“Humanity: The Chimpzees Who Would Be Ants”

Susantha Goonatilake - Sri Lanka

“Toward a Global Science: Mining Civilizational Knowledge”

Peter Hess - Director Faith Project National Center for Science Education

"Theological Problems and Promises of an Evolutionary Paradigm"

John Mears - Associate Professor of History Southern Methodist University

“Implications of the Evolutionary Epic for our Understanding of Human History”

Rue Loyal - Professor of Philosophy, Luther College, Iowa

Fred Spier - Senior Lecturer, Big History, Institute for Interdisciplinary Studies, University of Amsterdam

Book Reviews

EVENING THOUGHTS: Reflecting on Earth as Sacred Community


By Stephen Scharper

In future years, when the history of our lagging environmental consciousness is written, there may well be a special place devoted to the work of Thomas Berry.

Berry, a Passionist priest, cultural historian and self-described “geologist,” has for almost four decades been writing and reflecting on the place of the human within an awe-inspiring, unfolding and increasingly mysterious cosmos. His speculations are fueled not simply by intellectual curiosity, but by a deep concern about the baleful plundering of the planet.

Formerly director of the Riverdale Center of Religious Research and founder of the history of religions program at Fordham University, Berry served as environmental advisor to the Clinton administration; and through his numerous lectures, media appearances and writings, like The Dream of the Earth (1988) and The Great Work (2000), proved an inspiration to countless environmental scholars and activists, especially among religious communities.

Unlike other environmental approaches, Berry’s is rooted squarely and deeply within the universe itself, the only “text without a context.” For Berry, the universe is primary; we as a species are derivative. As he avers, “There is ultimately only a single community. No community…can survive that is not founded in the unity of the universe.”

In our hubris, aided by both modern technologies and religious and cultural heritages, we as a species have considered ourselves masters over, rather than, as Aldo Leopold noted, “just plain citizens” of the life community on the planet. Such a stance has contributed to a most radical moment of destruction of the world’s ecosystems, one that
is, according to Berry, jeopardizing the last 65 million years of earth development, and through global climate change, altering the very foundations upon which life has evolved and flourished. (The fact that even George W. Bush, after steadfastly denying the human role in climate change and refusing to sign the Kyoto treaty, begrudgingly conceded in his 2007 State of the Union address that humans are contributing to global warming, is a measure of just how grave the situation has become.)

*Evening Thoughts*, a collection edited by Mary Evelyn Tucker, a former student of Berry and co-founder of the Forum on Religion and Ecology, is, in a sense, a type of pure Berry extract, a powerful concentration of his major themes distilled into a dozen essays, along with a laconic and illustrative biographical sketch provided by Tucker.

By placing our ecological story within the larger context of an unfolding cosmos, or “cosmogenesis,” Berry is attempting to weave a new wisdom tradition out of the discoveries of contemporary sciences and the insights of traditional religious cosmologies—neither of which, on their own, can adequately deal with our contemporary challenges, but, intertwined, may, Berry hopes, provide a lifeline for both the human species and the life systems of the planet.

As past president of the American Teilhard Association, Berry has been deeply touched by the pioneering Jesuit geologist cum theologian, Pierre Teilhard de Chardin (1881-1955), especially his notion that the universe has a “psychic-spiritual” dimension as well as a material one. This, for Berry, ranks Teilhard as the greatest Christian theologian since St. Paul, who also discerned that the universe itself was intimately involved in the salvation story and the Christ event. For Berry, if the human has a psychic spiritual mode of being, then the universe must be a psychic-spirit-inducing process…. Indeed, since the universe is a singular reality, consciousness must, from its beginning, be a dimension of reality, even a dimension of the primordial atom that carries within itself the total destiny of the universe.

Yet Berry is doing more than attempting to fashion a new wisdom tradition. By ascribing consciousness and agency to the universe, his project is ultimately a metaphysical one, rooted in what he terms “the universe story.” Whereas the architects of post-structuralism, such as Jacques Derrida and Michel Foucault, disparage the universalist claims of modernity and focus on language, tending to view nature and the universe through the lens of discourse. Berry is grappling with the question of how do we relate to a metaphysical reality, such as the universe, that transcends both human consciousness and human discourse. For Berry, the universe is not merely an object of representation, but a primordial agent, a “Thou.” As Berry cogently asserts, the universe is not a “collection of objects, but a communion of subjects.” This insight is not only a forceful antidote to a consumer culture of commodification, but a novel alternative to a postmodern focus on language that ultimately shies away from such a grand metaphysical project.

*Evening Thoughts* provides a pithy, concentrated overview of Thomas Berry’s provocative and prodigious trajectory, and represents a welcome invitation to the entire human family to “befriend” rather than betray the earth.

Stephen B. Scharper is associate professor of religious and environmental studies at the University of Toronto. This review was reprinted from the journal *America*, March 26, 2007, with the permission of America Press, Inc. (c) 2007. All rights reserved. For subscription information, please call 1-800-627-9533 or visit: [www.americamagazine.org](http://www.americamagazine.org).

**New Books and Articles**


A new collection that is available from Amazon.com, promised for June 2007. Here is the publisher’s writeup and the book’s table of contents.

*This volume offers a contribution to Teilhardian scholarship with a particular focus in mind, namely his significance for current debates about the human relationship with the natural world. His cosmic mysticism and intense interest in both cosmological and evolutionary sciences are highly relevant to current debates about how best to construct a meaningful spirituality for the twenty first century. Not only does this book probe more deeply into his mystical insights in way that challenges the reader’s understanding of spirituality, it also offers a critical revision of aspects of his thought in the light of current debates in evolutionary science, ecotechnology and the challenges posed by environmental ethics. By focusing on the human person, people, and the planetary context in which people are situated, Teilhard takes us beyond the current debates between anthropocentrism and biocentrism that have characterised contemporary discussion about environmental ethics. The volume highlights areas where scholars have different interpretations of Teilhard’s thought, raising new and interesting areas of debate that have been ignored in the past. It also points to the significance of his thought for developing a creative and mutual exchange between Eastern and Western Christian traditions.*

**Preface:** Introduction to the Volume Celia Deane-Drummond

I. Teilhard and the Cosmos

1. Exploring Teilhard’s ‘New Mysticism’: ‘Building the Cosmos’

James W. Skehan, SJ (Professor and Director Emeritus,
Emergent Universe Project.

www.emergentuniverse.org/emp.

A new site by a diverse consortium of the Institute for Complex Adaptive Matter - a multi-campus research program of the University of California, the San Francisco Exploratorium, and the science museums of Chicago and Minnesota. Members include David Pines, veteran complexity theorist and founding co-director of ICAM (earlier of the Santa Fe institute), Piers Coleman, professor of physics at Rutgers, and Linda Feferman, a producer of educational films to convey emergent principles. We quote from the website.

The breathtaking quality of emergence lies in its broad applicability, from ants to people, and from electrons to galaxies. We assume that we can sing and dance together because we are intelligent and coordinate our behavior, and so it is surprising to see the coordinated chirping of crickets, and shocking to discover that the same principles apply to mindless things such as water molecules arranging themselves in a crystalline structure to form ice. When you get enough things together, and they interact in just the right way, they suddenly shift to coherent behavior. Scientists across multiple fields have found that such systems don't require a central ringleader directing the way – their self-organization is inevitable, due to the local interactions of nearest neighbors.

Emergence represents a revolutionary paradigm shift away from reductionism (the understanding of the world through understanding the component parts. Scientists working within the revolutionary paradigm of emergence study the organizing principles causing collective behavior across many disciplines.


One of the most visionary and indeed spiritual leaders of our time draws on his long experience to offer unique insights for a sustainable planetary future. Mikhail Gorbachev is disappointed that the Perestroika and Glasnost
he so fostered to liberate the Soviet Union did not expand to a salutary global dimension. Alas, we are now beset by an interlinked plethora of crises: political, economic, social, ecological, terrorism. As a response he has actively initiated the Green Cross environmental movement, with a special emphasis on water use justice, and has been a prime source, with Maurice Strong and others, of the Earth Charter Initiative document. The first chapter, How I Became Green, is a remarkable story of his life, born in 1931, from agrarian peasantry, Stalinist oppression, World War II, and into later years when he became party chairman. Seeing battlefield corpses and carnage with his own eyes moved and inspired him to vigorously seek to end the cold war, a deep experience sorely lacking with superpower bosses today.


The University of Exeter theologian and author of Teilhard De Chardin: Theology, Humanity and Cosmos (reviewed by Thomas King, SJ in the previous issue) here continues his considerations of Teilhard’s vision. Two main themes might be noted – an expanded sense of an active Christic presence in a convergent cosmos, and a renascence of a Lamarkian view of life which Teilhard endorsed.

It is the latter point that can be taken further because a novel readmission of Lamarck’s early 19th century naturalist preiscence is just occurring in the scientific press. This revolution has at least two aspects. One that Grumett emphasizes is Jean Baptiste’s sense of an immanent “anticlance” spontaneity underlying life’s florescence, which has much affinity to Teilhard’s creative radial energy “within of things.” The Orthogenesis note above speaks to this quality. The other aspect is an appreciation of how the theory of acquired characteristics does actually work in genetic and organic development. To this end, one can cite recent literature which specifically proposes a Darwinian evolution much revised to include Lamarckian themes. Examples might be Bruce Weber and David Depew, eds. Evolution and Learning. 2003; Eva Jablonka and Marion Lamb. Evolution in Four Dimensions. 2005; and a special Epigenetics topical issue of the journal Cell (128/4, 2007). We next reprint the article abstract.

Pierre Teilhard de Chardin develops, as is well known, a model of evolution as a convergent progression from primordial multiplicity through increasing degrees of complexity toward a final Omega point of spiritual consummation. I explore how Teilhard fuses Darwinian and Lamarckian theories of evolution in developing his own, and in particular his defense of the view that Lamarckism is fundamental to a proper understanding of evolution’s human phase. Teilhard’s scientific interpretation of evolution is inspired by Christian cosmological insights derived from patristic theology and contemporary Pauline scholarship and cannot be separated from them.

His integration of science and theology provides the basis for a renewed evolutionary natural theology that supplants the traditional static models developed by William Paley and others. Teilhard’s natural theology also provides a framework for theological ethical reflection on how humanity should act in its capacity as created co-creator with God. In later work, he considers the implications of his evolutionary theology for the wider universe. Teilhard thus presents an invigorated natural theology grounded in evolution that confirms and completes a dynamic and teleological view of the cosmos.


The latest work of the Columbian missionary and environmentalist again clearly evokes and documents the urgent reality of a life’s sacred earthly abode now in dire peril. Everything about global warming is true, nuclear power is not a panacea, why are we frittering away our last chances. Two decades in the Philippines have sensitized Fr. Sean to the many plights of indigenous peoples. A sense of this worldly sojourn as God’s vibrant creation, which we are summoned to heal and sustain, is long overdue. The risen Jesus thus becomes the cosmic Christ who fills and renews this created realms and its creatures. A welcome volume that is available at $14.95 paperback on Amazon.com.


In his latest, right on essay, environmentalist McKibben proposes to move beyond the Deep Ecology view to emphasize a practical sustainable society based local agriculture, commerce, and ecovillage living. All the hybrid vehicles in the world will not save us if we do not learn to rehabit sensibly and lightly together in viable communities. (Customers who bought this book also bought: Blessed Unrest: How the Largest Movement in the World Came into Being and Why No One Saw It Coming by Paul Hawken, another veteran voice on grassroots citizen actions worldwide.) Here are Bill McKibben’s own words from his website.

In my new book, Deep Economy, I’ve set out to challenge the prevailing view of our economy. For the first time in human history, “more” is no longer synonymous with “better”—indeed, for many of us, they have become almost opposites. I want us to think in new ways about the things we buy, the food we eat, the energy we use, and the money that pays for it all. Our purchases need not be at odds with the things we truly value.

The time has come to move beyond “growth” as the paramount economic ideal and begin pursuing prosperity in a more local direction, with cities, suburbs, and regions producing more of their own food, generating more of their own energy, and even creating more of their own culture and entertainment. This concept is already blossoming...
around the world with striking results, from the burgeoning economies of India and China to the more mature societies of Europe and New England. For those who worry about environmental threats, there are solutions to work through the worst of those problems; for those who wonder if there isn’t something more to life than buying, I encourage you to consider your life as an individual and as a member of a larger community.


This is the work I noted in the Orthogenesis 2007 article. An emeritus Professor of Biology at the University of Victoria, British Columbia writes his 500 page opus, which may be the most significant contribution so far to a new evolutionary synthesis. Gaining in strength and credence over the past decades, this major expansion beyond neoDarwinian mutation and selection to include the prior impetus of self-organizing dynamics is lately reaching critical cohesion. Reid discusses its many influences and evidences across biological realms such as symbiosis from bacteria to ecosystems, modularity, epigenesis, adaptability, connectivity, increasing complexity, and so on. The case now appears sufficiently robust for a recovery of a directional “orthogenesis” as a “progressive” hierarchical nest of emergent whole entities. Natural selection, long the only force, fades before this novel “generative” agency. Along the way it is noted that cosmologists in search of a single equation will miss these ramifying biological propensities. While much collaborative translation remains, what is “in the air” is not only an alternative theory but a view of life’s nested evolutionary genesis to its mindful human phase as meant to be.


The Barry University theologian continues her evocation of the writings of Anglican biochemist Arthur Peacocke which can be seen to imply an evolutionary cosmology of feminine procreation. In this regard, human persons rightly participate through ethical social and environmental concern and on-going co-creation. Such insights then proffer a rare fertile alternative to the moribund string theories of physics, one might add. We next reprint the article abstract.

In *Creation and the World of Science* (1979) scientist-theologian Arthur Peacocke asks what the role of humanity might be in relation to creation if conceived within the scientific perspective that favors the theological paradigm of the panentheistic God-world relationship. Deeming roles such as dominion and steward as liable to distortion toward a hierarchical understanding of humanity’s relation to the rest of creation, Peacocke proposes seven other roles to express the proper relationship of humanity to the cosmos in panentheistic relation to its Creator. Although each of these models has merit within a panentheistic paradigm, Peacocke and the paradigm itself suggest that the panentheistic model of God in relation to an evolving cosmos may be most effectively imaged through a model of female procreativity. In keeping with this proposal, I develop the understanding of humanity’s ecologically ethical role in relation to the evolving cosmos in terms of the midwife to the process of procreation. I evaluate the efficacy of the midwife as a paradigm for ecological ethics by means of several criteria, including the propositions of the Earth Charter, “a declaration of fundamental principles for building a just, sustainable, and peaceful global society in the 21st century.”


A unique, thoughtful chronicle of the exemplary mission of Catholic sisters to live mindfully upon a resacralized earth, guided in part by the New Story of Teilhard, Thomas Berry, and Miriam McGillis. We quote from the publisher’s website, and include the table of contents.

*It is perhaps the critical issue of our time: How can we, as human beings, find ethical and sustainable ways to live with one another and with other living beings on this planet? Inviting us into the world of green sisters, this book provides compelling answers from a variety of religious communities.*

Green sisters are environmentally active Catholic nuns who are working to heal the earth as they cultivate new forms of religious culture. Sarah Taylor approaches this world as an "intimate outsider." Neither Roman Catholic nor member of a religious order, she is a scholar well versed in both ethnography and American religious history who has also spent time shucking garlic and digging vegetable beds with the sisters. With her we encounter sisters in North
America who are sod-busting the manicured lawns around their motherhouses to create community-supported organic gardens; building alternative housing structures and hermitages from renewable materials; adopting the "green" technology of composting toilets, solar panels, fluorescent lighting, and hybrid vehicles; and turning their community properties into land trusts with wildlife sanctuaries.

Green Sisters gives us a firsthand understanding of the practice and experience of women whose lives bring together Catholicism and ecology, orthodoxy and activism, traditional theology and a passionate mission to save the planet. As green sisters explore ways of living a meaningful religious life in the face of increased cultural diversity and ecological crisis, their story offers hope for the future—and for a deeper understanding of the connections between women, religion, ecology, and culture.

Introduction: Planetary Call and Response

2. Standing Their Ground: From Pioneering Nuns to Bioneering Sisters
3. It Isn't Easy Being Green: Habitat, Habits, and Hybrids
5. Nourishing the Earthbody: Sacramental Foodways and Culinary Eucharist
6. "The Tractor Is My Pulpit": Sacred Agriculture as Priestly Practice
7. Saving Seeds: Heirloom Conservation and Genetic Sanctuaries
8. Stations of the Earth: Body Prayer, Labyrinths, and Other Peripatetic Rituals

Conclusion: Stepping into the Future


A significant work for a number of reasons. A philosopher at the University of Toronto, Thompson has long collaborated with the late systems neuroscientist Francisco Varela. Along with psychologist Eleanor Rosch, they wrote *The Embodied Mind* (MIT Press, 1991). This present large volume carries forth the essence and mission of Varela’s thought in several areas. Living entities are to be understood as autopoietic in kind for they have a self-produced bounded viability which constantly maintains itself. In so doing, organisms are engaged in a co-creative “enactive” process with their environment wherein each influences and forms the other. By this insight, autopoiesis can be most equated with cognition, and evolution thus seen as a grand learning process. Mind, as broadly defined, is no longer confined to a computational brain, but suffuses body and biosphere. Thompson thus adds another strong argument for the presence such self-organizing systems at work prior to any mutative and selective effects.

The central metaphor for this approach is the mind as embodied dynamic system in the world, rather than the mind as neural network in the head. (11) Whether the system is a cell, immune network, nervous system, insect colony, or animal society, what emerges is a unity with its own self-producing identity and domain of interactions or milieu, be it cellular (autopoiesis), somatic (immune networks), sensorimotor and neurocognitive (the nervous system), or social (animal societies). (65) According to the viewpoint I am proposing, self-organization and natural selection are not opposed but are actually two interwoven aspects of a single process of enactive evolution. (215)


A Reader in English at London Metropolitan University situates her latest work within a grand historical revision about what kind of cosmos and nature we might abide in. Rather than the waning modernist machine, a postmodern alternative can view an innately organic milieu distinguished by dynamic, communicative systems which equally imbue biological and cultural evolution. In this new thinking and imminent synthesis, creative nets of interrelation and information join separate individuals and fragments into a viable social entity. But this well intentioned British sociological school labors within an ill defined “materialism” and verbose jargon not yet able to allow or envision a greater creation.

This endeavor will involve, first, an encounter with the long revolution in human thought and scientific understanding which has gradually been building in the twentieth, and now twenty-first centuries: the revolution that is taking place in the scientific paradigm shift from ‘The Age of Reduction’ to ‘The Age of Emergence.’ (12) By drawing on developments in the sciences, particularly complexity science, I hope to show that sociality can be seen as firmly rooted in an account of evolution that sees it as a process of symbiogenetic co-operative communication (from the cell all the way up), with the consequent emergence of more complex levels of life. (13)

A 2002 translated volume by the Archbishop of Lublin, Poland, who is also Chancellor of the Catholic University of Lublin. Fr. Zycinski has doctorates in both theology and philosophy and writes often on matters of cosmology, physics, the anthropic principle, and their religious relevance. To do justice, we quote from the publisher’s announcement.

Written by Archbishop Jozef Zycinski of Lublin, this book offers an important and insightful examination of the basic philosophical questions involved in the relation between evolutionary theory and the Christian religion. It is made more valuable by its serious study of Pope John Paul II’s message about evolution issued in 1996.

The book begins with a discussion of the biological and metaphysical aspects of Darwin’s own conception of evolution. It goes on to reject two versions of “fundamentalism”—the Christian anti-evolutionism of authors such as Phillip Johnson and the anti-Christian scientism of authors such as Richard Dawkins—and to explore the possibility of a dialogue between evolution and Christian thought from the perspective of Pope John Paul II.

Next, Zycinski calls into question the classical opposition between the teleological and the causal interpretation of evolutionary processes. He attempts to overcome that opposition by reliance on the concepts of supervenience and an evolutionary attractor. In this way, he proposes a new approach in which teleological anthropomorphisms as well as reductionist metaphors are avoided.

The author then presents a theology of nature in which particular attention is given to the immanence of God and to Divine kenosis. Finally, the book offers a theological anthropology, including chapters on the harmonization of paleontology and theological anthropology, the limits of sociobiology, and original sin in relation to scientific knowledge of the human person.

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**Teilhard Perspective**

TEILHARD PERSPECTIVE is published by the American Teilhard Association, a non-profit organization whose goals are to explore philosophical, scientific, religious, social and environmental concerns in light of Teilhard’s vision and to clarify the role of the human phenomenon in this emerging understanding of the cosmos.

We welcome suggestions of relevant ideas, books, news, events and contributions of articles for this newsletter. The editor’s address is (Arthur Fabel) 11 Meadowbrook Dr., Hadley, MA 01035; email: artfabel@crocker.com. The Teilhard Perspective newsletter along with the biannual *Teilhard Studies* pamphlet and meeting notices are available through membership. Please contact us at: American Teilhard Association, The Spirituality Institute, Iona College, 715 North Ave., New Rochelle NY 10801. Annual membership is $35. Our new website address is: www.teilharddechardin.org.

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