

Cosmology and the Ecozoic Society

Thomas Berry "The Spirituality of Earth"
Herman Greene "Cosmology and Law"
Angela Manno "Contemplation, Creativity and the Ecozoic Age"
Mike Bell "Cosmology and Spirituality"
Tim Watson "Rethinking Houses as Living Systems"
Frank Cook "Eat Something Wild Every Day"
Jay McDaniel "An Acoustic Theology of Ecology"

THE ECOZOIC
Reflections on Life in an Ecological Age

A publication of the Center for Ecozoic Studies
www.ecozoicstudies.org

The Great Work

(The Task of Bringing into Being the Ecozoic Era)

*We are about the Great Work.
We all have our particular work—some of us are teachers,
some of us are healers, some of us in various professions,
some of us are farming.
We have a variety of occupations.*

*But beside the particular work we do
and the particular lives we lead,
we have a Great Work that everyone
is involved in and no one is exempt from.
That is the work of moving on from a terminal Cenozoic¹
to an emerging Ecozoic Era² in the story of the planet Earth . . .
which is the Great Work.*

Thomas Berry
Centre for Ecology and Spirituality
Ontario, Canada, 1993

¹Our current geo-biological era, the Cenozoic Era, began 65,000,000 years ago following the mass extinction of dinosaurs and many other species. Now Earth is undergoing another mass extinction of plant and animal species, this time caused by the impact of human activity on the community of life systems. The Cenozoic Era is ending.

²That another geo-biological era will follow the Cenozoic Era is not in question. What is in question is whether humans and other forms of life as we know them will continue to flourish. Will we achieve a viable mode of human presence on the Earth? The "Ecozoic Era"—a time of mutually enhancing relationships among humans and the larger community of life—represents the hope that we will.

The Ecozoic: Reflections on Life in an Ecological Age

Number 1, 2008

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The mission of CES is to offer a vision of an ecozoic society and contribute to its realization through research, education and the arts. CES emphasizes critical reflection, story and shared dream experience as ways of enabling the creative advance needed to bring into being a new mode of human civilizational presence, and also of discerning the practical steps leading to the Ecozoic. CES understands the universe as meaningful, continuously evolving, and relational. In such a universe, the Ecozoic is not something to be arrived at, but something ever to be created. Its hallmarks are inclusiveness, interdependence, and appreciation; communion, differentiation, and subjectivity; and sensitivity, adaptability, and responsibility. It involves more just and cooperative relationships among humans, as well as transformed relationships of humans with the larger community of life.

Table of Contents

The Spirituality of Earth	1
<i>Thomas Berry</i>	
Cosmology and Spirituality	8
<i>Mike Bell</i>	
By Cosmic Design, I Confess	14
<i>John P. Cock</i>	
Law and Cosmology: An Earth Jurisprudence	16
<i>Herman F. Greene</i>	
Four Classics of Huang Di (The Yellow Emperor)	25
<i>Huang Di, Translation by Ming Lee</i>	
Quintessence	26
<i>Tom Jablonski</i>	
Transformation, The Universe Story, and Love: What Works?	29
<i>Alice Loyd</i>	
An Evolving Cosmology: A Swamp Yankee Journeys to the Center	32
<i>Fred Lanphear</i>	
Practical Mysticism: Contemplation, Creativity, and the Ecozoic Age	37
<i>Angela Manno</i>	
An Acoustic Theology of Ecology: Animals, Jazz, Cosmology and Sustainability	41
<i>Jay B. McDaniel</i>	
The Promise of More	48
<i>John Surette, SJ</i>	
Rethinking Houses as Living Systems for All Life	50
<i>Tim Watson</i>	
Where is the Universe in the Universe Story?	57
<i>Herman F. Greene</i>	
Cook's Corner: Eat Something Wild Every Day!	72
<i>Frank Cook</i>	
For the Children: Poems	75
<i>Elley Shelp-Peck</i>	
The Forum: Letters to the Editor	76

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The Spirituality of Earth*

BY THOMAS BERRY

The subject we are concerned with is the spirituality of Earth. By this I do not mean a spirituality directed toward an appreciation of Earth. I speak of Earth as subject, not as object. I am concerned with the maternal principle out of which humans were born and whence they derive all that they are and all that they have. Humans in their totality are born of Earth. We are Earthlings. Earth is our origin, our nourishment, our support, our guide. Our spirituality itself is Earth-derived. If there is no spirituality in Earth, then there is no spirituality in us. Humans are a dimension of Earth. These two are totally implicated each in the other.

Not to recognize the spirituality of Earth is to indicate a radical lack of spiritual perception on the part of humans. We see this lack of spiritual insight in the earlier attitude of Euro-Americans, in their inability to perceive the spiritual qualities of Native American peoples and their mysticism of the land. The attack on these spiritual qualities by Christians constitutes one of the most barbaric moments in Christian history. This barbarism turned upon tribal peoples was loosed also upon American Earth with a destructive impact beyond human calculation.

The fragility of Earth has not yet impressed itself upon us. The brutality of our relation to Earth cannot but indicate a radical absence of spirituality in humans, not the lack of a spiritual dimension of Earth. The opaqueness is in human understanding of Earth, not in Earth's structure which expresses an abiding numinous presence. The Earth process has been generally ignored by religious-spiritual currents of the West. Our alienation goes so deep that it is beyond Westerners' conscious mode of awareness. While there are tributes to Earth in the Scriptures and in Christian liturgy, there is a tendency to see Earth as a seductive reality that brought about alienation from God in the agricultural peoples of the near East. Earth worship was the ultimate idolatry,

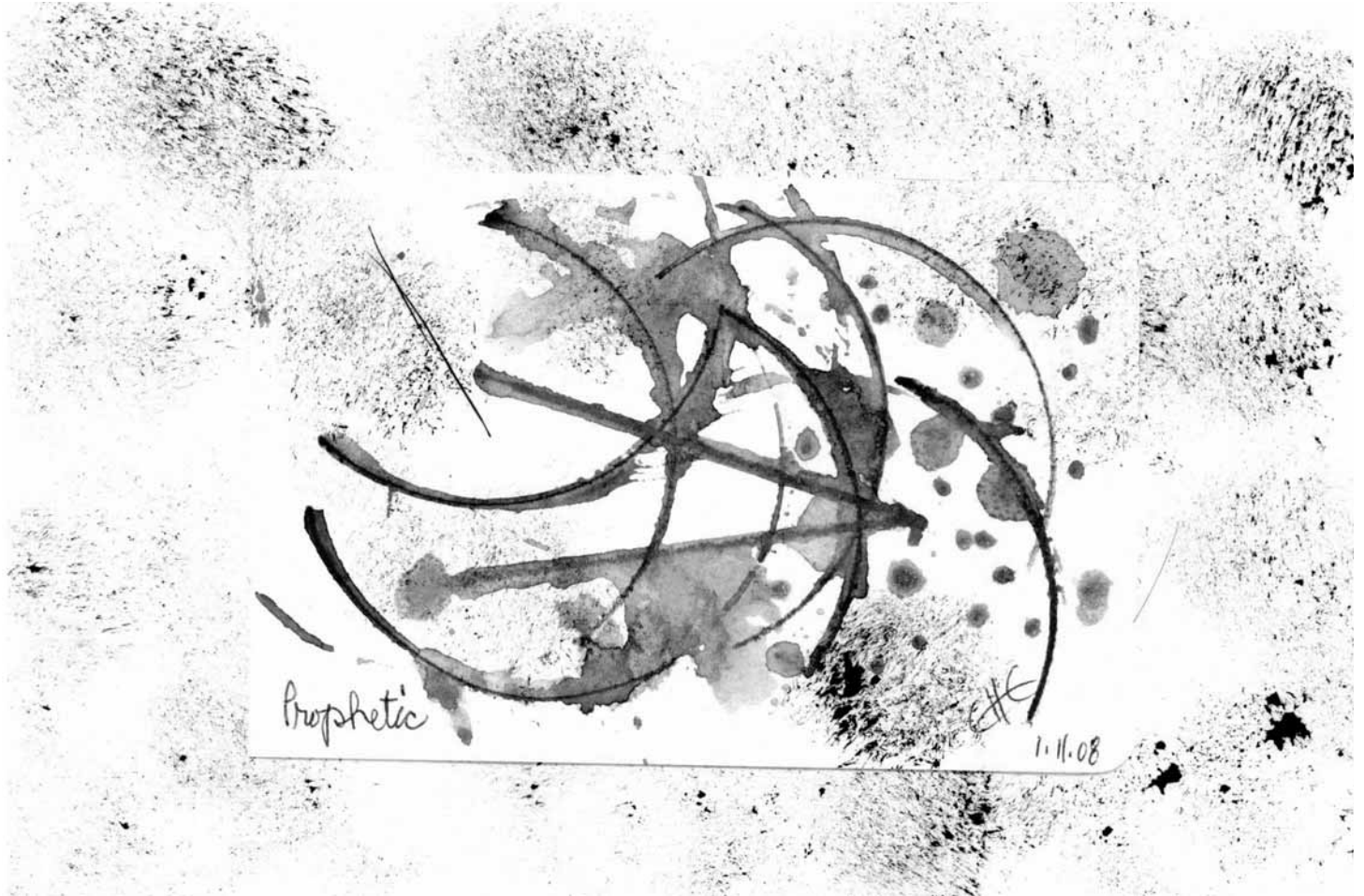
the cause of the Fall, and thereby the cause of sacrificial redemption by Divine personality. Thus, too, the Christian sense of being crucified to the world and living only for the Savior. This personal Savior orientation has led to an inter-personal devotionism that quite easily dispenses with Earth except as a convenient support for life.

This type of redemptive mysticism as it presently exists is possibly related in its origins to the Black Death of the mid-14th century, the most terrifying period in Western history, the period when a third to a half of the population died. At least partially in response to this experience, direct recourse was had to supernatural forces, to ancient spiritual powers, to esoteric traditions, to submerged pre-Christian rituals. But above all there was a new emphasis on redemptive forces within the Christian context, a renewal of primordial faith, of prayer to be sustained in a frightening world. Thus came Pietism, Puritanism, Jansenism, and a long list of sectarian movements, all with intensive spiritualities, generally with a strong Savior attachment.

This basic rejection of Earth in its existing form and longing for a transformed Earth manifested itself in a renewed Millenarianism, which in a variety of forms has dominated much Western thought in the past four centuries. Millenarianism involves a radical dissatisfaction with Earth and with the whole created order.

But while the devotional tradition thought to achieve salvation by spiritual processes in a redemptive context, another tradition emerged seeking to deal with the terror of life by inquiry into the functional dynamics of Earth and the entire universe. This research led to the secular-scientific-technological society now dominating human affairs to an overwhelming degree and establishing the main disciplines in the educational process. Especially when the secular-scientific approach to life is supported by the most powerful political form known in history,

* This paper was originally published in slightly different form in Charles Birch, William Eaken and Jay B. McDaniel, eds., *Liberating Life: Contemporary Approaches to Ecological Theology* (New York: Orbis Books, 1990), 151-58.



the modern nation state, the future direction of human affairs as well as the industrial exploitation of Earth is assured. The terror of life was to be answered by the domestication of Earth and the domination of the creative function of Earth by humans. This attitude, however designated as secular in form, involved a certain submerged religious dynamic which can be identified as a concern for creation process rather than redemptive process.

Thus we witness particularly in America two parallel societies: the redemption-oriented society with its spiritualities, and the creation-oriented "secular" society with its "spiritualities." These two communities have given extrinsic recognition to each other. Believing religious personalities are often proud of their acceptance of the modern world of science and technology. Scientists and technologists are often religious believers. Yet both of these societies are trivialized: redemptive-oriented society and its spiritualities because they are

isolated from the larger dynamics of the human community; and the secular-technological society because it has no depth of meaning, no numinous quality. Resolution of this impasse is the greatest single challenge to a functional contemporary spirituality.

We can produce spiritualities that function in a certain isolated context without regard for the larger society. We can produce spiritualities that offer redemptive solutions for society. But this latter is not liable to be effective in any extensive degree. It speaks in a rhetoric not available for secular society, or, if available, it widens rather than lessens the tragic inner division between the world of affairs and the world of divine communion. It does not offer a way of interpreting the inner life of society in a rhetoric available to the society. It does not establish an understanding of that authentic experience in contemporary life oriented toward communion with creation processes. Indeed, it does not recognize that the context

of any authentic spirituality lies in the creation myth governing the total life orientation.

This lack of appreciation of the Earth process is manifested at the present time by the training taking place in most seminaries. It is doubtful whether there is any seminary in the country where adequate attention is given to creation dynamics in the manner in which creation is experienced in our society. A long list could be drawn up of courses explaining redemption, soteriology, Christology, ecclesiology, revelation, Scripture, patristics, pastoral ministry, etc. Creation is generally presented as part of the tract on "God in himself and in relation to his creation." But creation in this metaphysical, Biblical, medieval theological context is not terribly helpful in understanding the creation process as this is set forth in scientific manuals or Earth Sciences or Life Science textbooks such as they are studied by children in elementary grades, high school, or college.

These classroom studies initiate the child into a world that has more continuity with his later adult life in its functional aspect than does the catechetical story of creation taken from Biblical sources. This schoolroom presentation of the world in which the child lives and finds his or her place in the world is all important for the future spirituality of the child. The school fulfills in our times the role of ancient initiation rituals introducing the child to the society and to his or her human and sacred role in this society. The tragedy is that the sacred or spiritual aspect of the initiation process is now absent. The child is given a physical process, a marvelous story of the emergence of the universe, of Earth, and of human beings, without reference to the spiritual aspect of this process. It is doubtful whether separate catechetical instructions with their heavy emphasis on redemptive processes can ever supply what is missing.

It may be that the later alienation of young adults from the redemptive, sacramental tradition is, in some degree, due to this inability to communicate to the child a spirituality grounded more deeply in creation dynamics as harmonized with modern scientific explanations of the galactic emergence of the universe, the shaping of Earth, the appearance of

life, of human beings, and the historical sequence in human development.

In this sequence, the child might learn that Earth has its intrinsic spiritual quality from the beginning, for this aspect of the creation story is what has been missing. This spirituality of Earth is what needs to be established if humans are to have a functional spirituality. Just how to give the child this integral world of spiritual and material—that is the issue. It is also the spiritual issue of the modern religious personality. Among our most immediate tasks is to establish this new sense of Earth as both spiritual and physical, and of humans as the consciousness, interpreter, and protector of that Earth.

We need to understand that Earth acts in all that acts upon Earth. Earth is acting in humans whenever humans act. In and through Earth, spiritual energy is present. This spiritual energy emerges in a total complex of Earth functions. Each form of life is integrated with every other life form. Even beyond Earth by force of gravitation every particle of the physical world attracts and is attracted to every other particle. This attraction holds the differentiated universe together and enables it to be a universe of individual realities. The universe is not a vast smudge of matter, some jelly-like substance extended indefinitely in space. Nor is the universe a collection of unrelated particles. The universe is rather a vast multiplicity of individual realities with both qualitative and quantitative differences, all in spiritual-physical communion with each other. The individuals of similar form are bound together in their unity of form. The species are related to each other by derivation; the later more complex life forms are derived from earlier more simple life forms.

The first shaping of the universe was into those great galactic systems of fiery energy constituting the starry heavens. In these celestial furnaces the elements are shaped. Eventually, after some ten billion years, the solar system and Earth are born out of stardust resulting from exploded stars. Earth particularly is our concern. So far as we know, Earth is the most unique of all the heavenly bodies. Here life, both plant and animal life,

was born in the primordial seas some three billion years ago. Plants came out upon the land some six hundred million years ago after planet Earth had shaped itself through a great series of transformations in forming the continents, the mountains, the valleys, the rivers, and the streams. The atmosphere was long in developing. Then animals came ashore along with plants. As life forms established themselves over some hundreds of millions of years, luxuriant foliage formed layer after layer of matter, which, then buried in the crust of Earth, became fossil formations. One hundred million years ago, flowers appeared and the full beauty of Earth began to manifest itself. Some sixty million years ago, birds were in the air. Mammals walked through the forest. Some of them, whales, porpoises, and dolphins, went back into the sea.

Finally, some two million years ago the ascending forms of life culminated in the awakening consciousness of humans. A wandering food-gatherer and hunter through all of this time until some eight thousand years ago, humans began to settle into village life. This change led to the archaic classical civilizations which have flourished so brilliantly over the past five thousand years.

Then some four hundred years ago a new stage of scientific development took place, which, in the 18th and 19th centuries, brought about that human technological dominance of Earth out of which the modern human being has emerged. This dramatic advance can be interpreted as Earth awakening to consciousness of itself in humans. The story of this awakening consciousness is the most dramatic episode of the entire Earth story.

The spiritual attitude that then caused or permitted humans to attack Earth with such savagery as we witness has never been adequately explained. That it was done by a Christian-derived society, and even with the belief that this was the Christian task of humans, makes explanation especially harsh for our society. Possibly it was the millennial drives toward a total transformation of the human condition that led humans, resentful that the perfect world was not yet achieved by divine means, to set about the violent sub-

jugating of Earth by their own powers in the hope that in this way the higher life of humans would be attained and human afflictions healed.

While this attainment and healing is the positive goal sought, it must be added that the negative, even fearful, attitude toward Earth resulting from the general hardships of life led to the radical disturbance of the entire Earth process. The increasing intensity shown in exploiting Earth was also the result of ever-rising and unsatiated expectations of Western peoples. Even further, the natural antagonisms of Earth were fostered by the Darwinian principle of the survival-of-the-fittest, indicating that the primary attitude of each individual and each species is for its own survival at the expense of the others. Out of this strife, supposedly, the glorious achievements of Earth would take place. Darwin's blindness to the cooperative and mutual dependence of each form of life on the other forms of life is amazing since he himself discovered the great web of life. Still he could not appreciate the principle of intercommunion.

Much more needs to be said on the conditions that permitted such a mutually destructive situation to arise between humans and Earth, but we must pass on to give some indication of the new attitude needing to be adopted toward Earth. This attitude involves a new spiritual and even mystical communion with Earth, a true aesthetic of Earth, a valid economy of Earth. We need a way of designating the Earth-human world in its continuity and identity rather than in its discontinuity and difference. In spirituality, especially, we need to recognize the numinous qualities of Earth. We might begin with some awareness of what it is to be human, what is the role of consciousness on Earth, what is the place of humans in the universe.

While the scholastic definition of a human being as a rational animal gives us some idea of humans among the biological species, it gives us a rather inadequate sense of the role of humans in the total Earth process. The Chinese have a better definition of humans as the *hsin* of heaven and Earth. This word *hsin* is written as a pictograph of the human heart. It

should be translated by a single word or a phrase with both a feeling and an understanding aspect. It could thus be translated by saying that humans are the “understanding heart of heaven and Earth.” Even more briefly the phrase has been translated by Julia Ch’ing in the statement that humans are the “heart of the universe.” It could, finally, be translated by saying that humans are “the consciousness of the world,” or that humans are “the psyche of the universe.” Here we have a remarkable feeling for the absolute dimensions of the human, the total integration of reality in humans, the total integration of humans in reality.

We need a spirituality that emerges out of a reality deeper than human beings, even deeper than life, a spirituality that as deep as the Earth process itself, a spirituality born out of the solar system and even out of the heavens beyond the solar system. There in the stars is where the primordial elements take shape in both their physical and psychic aspects. Out of these elements the solar system and Earth took shape, and out of Earth, human beings.

There is a certain triviality in any spiritual discipline that does not experience itself as supported by the spiritual as well as the physical dynamics of the entire cosmic-Earth process. A spirituality is a mode of being in which, not only the divine and the human commune with each other, but in which humans discover themselves in the universe and the universe discovers itself in humans. The Sioux Indian, Crazy Horse, called upon these depths of his own being when he invoked cosmic forces to support himself in battle. Upon his cheek he painted the lightning, placed a rock behind his ear, an eagle feather in his hair, and the head of a hawk upon his head. Assumption of the cosmic insignia is also evident in the Sun Dance Ceremony. In this dance the symbols of the sun and moon and stars are cut out of rawhide and worn by the dancers. The world of living, moving things is indicated by the form of the buffalo cut from rawhide, and by the eagle feathers. The plant world is represented by the cottonwood tree set up in the center of the ceremonial circle. The supreme spirit is represented by the circular form of the dance area.

So the spiritual personality should feel that he or she is constantly in communion with those numinous cosmic forces out of which he or she was born. This cosmic-Earth order needs to be supplemented by the entire historical order of human development such as was depicted on the shield of Achilles by Homer and on the shield of Aeneas by Virgil. Virgil spends long pages enumerating past and future historical events wrought on the shield of Aeneas by Vulcan at the command of Venus, Aeneas’s heavenly mother. All these forces are presently available to us in a new mode of appreciation. The historical and the cosmic can be seen as a single process. This vision of Earth-human development produces the sustaining dynamics of the contemporary world.

That there is an organizing force within the Earth process with both physical and psychic dimensions needs to be acknowledged in language and in imagery. It needs to be named and spoken of in its integral form. Earth has a unified functioning similar to the more particular organisms we are acquainted with. When we speak of Earth, we are speaking of a numinous maternal principle in and through which the total complex of Earth phenomena takes its shape. Recently, biologist Lewis Thomas, considering the integration of life systems of Earth, had a sudden intuition in which he saw the total life process of Earth as a single cell. Such is their radical interdependence.

In antiquity this mode of being of Earth was indicated by personification. The name “Earth” itself designates a deity in Hesiod and in the Homeric hymns. In the Eastern Mediterranean, the personification is expressed as Cybele, and in the Greek world as Demeter. Biblical revelation, however, represents a basic antagonism between the transcendent deity, Yahweh, and the Earth mother of the surrounding societies. There is a basic effort here to keep the asymmetry in the relationship between the divine and the created. In the doctrine of the Madonna in later

That there is an organizing force within the Earth process with both physical and psychic dimensions needs to be acknowledged in language and in imagery.

Christian history, many passages indicate that Mary was to be thought of as Earth, in which the True Vine is planted and made fruitful by the Holy Spirit. This Mary-Earth equation was not as adequately developed as it might have been in association with the doctrine of the Incarnation.

Probably it belongs to the dialectics of history that the direct personal association of humans with the unique historical individuals, the Savior and his Mother, had to develop before any adequate feeling for the mystique of Earth could take place. Perhaps, too, a full development of redemption processes was needed before this new mode of human-Earth communion could find expression in our times.

However this may be, a shift in attention is now taking place. Several things are happening. The most notable single event is that modern science is giving us a new and more comprehensive account of how humans were born out of Earth. The story of the birth of humans was never known so well as now. After discovery of the geological stages of Earth transformation

and the discovery of the sequence of life in ancient fossil remains by George-Louis Leclerc Buffon, James Hutton, and Charles Lyell, came Charles Darwin's discovery of the emergence of all life from primordial forms presented in his 1859 *Origin of Species*. While Darwin saw the birth of humans only out of the physical Earth, Teilhard de Chardin saw the birth of humans out of both the physical and the psychic dimensions of Earth. Thus the whole burden of modern studies is to narrate the story of the birth of humans from our Mother Earth.

Once this story is told, it immediately becomes obvious how significant the title Mother Earth really is, how intimate a relationship exists, how absolute our gratitude must be, how delicate our concern. The long motherless period of modernity is coming to a close. Hopefully, too, the long period of human mistreatment of Earth is being termi-

nated. If it is not terminated, if we fail to perceive not only our Earth origin, but also our continuing dependence on our Earth-Mother, then it will be due in no small measure to the ephemeral spiritualities that have governed our thoughts and attitudes and actions.

In this mother-child relationship, however, a new and fundamental shift in dependence has now taken place. Until recently the child was taken care of by the Mother. Now, however, the mother must be extensively cared for by the child. The child has grown to adult status. The mother-child relationship needs to undergo a renewal similar to that in the ordinary process of maturing. In this process, both child and mother experience a period of alienation. Then follows a reconciliation period, when mother and child relate to each other with a new type of intimacy, a new depth of appreciation, and a new mode of interdependence. Such is the historical period in which we are living. Development of this new mode of Earth-human communion can only take place within a profound spiritual context: Thus the need for a spirituality that will encompass this process.

As a second observation concerning our newly awakening sense of Earth, we could say that a new phase in the history of the Madonna figure of Western civilization has begun. Association of the Virgin Mother with Earth may now be a condition of Mary returning to the center of Western civilization. Her presence may also be a condition for overcoming our estrangement from Earth. In the Western world, Earth known only in itself as universal mother is not sufficient. It must be identified with an historical person in and through whom Earth functions in its ultimate reaches. Phrases referring to Mary as Earth are found throughout Western religious literature. Whether this is anything more than a simple rhetorical device needs a thorough inquiry at the present time. But whether or not this relationship is given in any extensive manner in prior Christian literature, it is a subject of utmost importance for our entire civilizational venture. Few if any other civilizations were so deeply grounded in a feminine mystique as the Medieval Period of

Recovery of this capacity for subjective communion with Earth is a consequence and a cause of a newly emerging spirituality.

Western Christendom. A vital contact with this earlier phase of Western civilization is hardly possible without some deep appreciation of its feminine component. Thus we cannot fail to unite in some manner these two realities: Earth and Mary. Earth needs embodiment in an historical person; such an historical person needs an Earth identity to fulfill adequately her role as divine mother.

A third observation is that the essence of the new culture will necessarily be an age dominated by the symbol of woman. This, too, depends on the identification of woman with Earth and its creativity. Woman and Earth, these two are inseparable. The fate of one is the fate of the other. This association is given in such a variety of cultural developments throughout the world in differing historical periods that it is hardly possible to disassociate the two. Earth consciousness, woman consciousness; these go together. Both play a stupendous role in the spirituality of humankind as well as in the structure of civilizations. Our alienation from Earth, from ourselves, and from a truly creative man-woman relationship in an overly masculine mode of being, demands a reciprocal historical period in which not only a balance will be achieved but even, perhaps, a period of feminine emphasis.

A fourth observation I would make is to note our new capacity for subjectivity, for subjective communion. In this we are recovering the more primitive genius of humans. For in earlier years, humans experienced both the intimacy and the destiny of their relation with Earth and with the entire natural world. Above all they lived in a spirit world, a world that could be addressed in a reciprocal mood of affectionate concern. This is what gave rise to sympathetic magic as well as to the great rituals, the majestic poetry, and the awesome architecture of past ages. Nothing on Earth was a mere "thing." Every being had its own divine, numinous, subjectivity, its self, its center, its unique identity. Every being was a presence to every other being. Among the more massive civilizations, China gave clear-

est expression to this intimacy of beings with each other in its splendid concept of *jen* (human-heartedness). All beings are held together in *jen* as in Saint Paul all things are held together in Christ. But perhaps an even better analogy is to say that while for Newton the universal law of gravitation whereby each particle of matter attracts and is attracted to every other particle of matter in the universe indicates a mere physical force of attraction, the universal law of attraction for the Chinese is a form of feeling identity.

For this reason there is in China the universal law of compassion. This is especially observable in humans, for all men and women have hearts that cannot bear to witness the suffering of others. When the objection was made to Wang Yang-ming in the 15th century that this is evident only in human relations, Master Wang replied by noting that even the frightened cry of the bird or the crushing of a plant or the shattering of a tile or the senseless breaking of a stone immediately and spontaneously causes pain in the human heart. This would not be, he tells us, unless there exists a bond of intimacy and even identity between ourselves and these other beings.

Recovery of this capacity for subjective communion with Earth is a consequence and a cause of a newly emerging spirituality. Subjective communion with Earth, identification with the cosmic-Earth-human process, provides the context in which we now make our spiritual journey. This journey is no longer the journey of Dante through the heavenly spheres. It is no longer simply the journey of the Christian community through history to the heavenly Jerusalem. It is the journey of primordial matter through its marvelous sequence of transformations—in the stars, in Earth, in human beings toward an ever more complete spiritual-physical intercommunion of the parts with each other, with the whole, and with that numinous presence which has ever been manifested throughout this entire cosmic-Earth-human process.

Cosmology and Spirituality

BY MIKE BELL

Once upon a time there was an emperor of a great kingdom who had a most unusual hobby—at least for emperors. This emperor was fascinated by cosmology.

Cosmology is the study of the cosmos—the universe, Earth. It tries to figure out the answers to the really big questions. Where did this world come from? How did it get started? How did it develop? What is our role as humans on this Earth? What holds Earth together—what does it stand on? The emperor spent hours and hours trying to answer these questions. But it was the last question—What does Earth stand on?—that he found particularly troublesome.

The Emperor's Question

So one day he summoned one of his favourite consultants, a wise, old man. And he said to him, "Wiseman, what does Earth stand on?"

"Well, Your Majesty," said the Wiseman, "Earth stands on the back of a tiger."

The emperor thought about this for a moment and then he said, "Well, Wiseman, tell me, what does the tiger stand on?"

"Your Majesty, the tiger stands on the back of an elephant."

The emperor thought about this some more, and then he asked the next question. "Well, Wiseman, tell me, what does the elephant stand on?"

The Wiseman responded, "Your Majesty, the elephant stands on the back of a turtle."

To this the emperor said, "Well, Wiseman, tell me . . ."

But at this point the Wiseman said, "Your Majesty, stop right there. From here on it's turtles all the way down."

Our Cosmological Questions

Today we are still asking cosmological questions, but these are different questions than the Emperor was asking. The wise men of science have helped us to answer the Emperor's question. They have told us about the origins of the universe and its development: from the "Big Bang" 13.7 billion of years ago; to the creation of the billions of galaxies in an expanding universe; to the death of a particular star in a particular galaxy that exploded and gave birth to our sun and the planets and Earth surrounding it; to the creation of Earth four billion years ago; to the emergence of the human species two million years ago when a primate with an opposable thumb began walking upright.

We don't ask what Earth stands on, rather we ask: What is our role as a human species and as individuals on this Earth? Do we have a purpose? How do we relate to one another and to other species? How should we live our lives? Is there a God or some kind of divine power that is leading us on our journey? And what will happen to us at the moment of our death?

What Does Spirituality Rest Upon?

These are cosmological questions, and they are deeply spiritual questions as well. And as we recognize their spiritual nature, we are drawn to the question similar to the one the Emperor asked. What does our spirituality rest upon?

For many of us who have grown up within the framework of an organized religion, the wise men of organized religions—and almost all of them are wise *men*—have told us that our spirituality rests upon a church, or more specifically upon the doctrines of a church. And while this answer may satisfy many people, others have come to believe that spirituality is

something beyond the precepts of an organized religion . . . somehow it seems difficult to shoe-horn our spirituality within the narrow strictures of church doctrine. And so we continue on our journey and ask the next question . . . “And what does the Church rest upon?”

The same wise men have said to us, “Well, the Church rests upon a book.” And while this answer may satisfy many of us, for this book—the Bible—is a wonderful book, we begin to notice that many people interpret this book in their own way, and some of those interpretations are downright scary. For many, the interpretations of the book have led to conflict, persecutions and even wars—all for the purpose of distinguishing the true believers from the heretics.

And so, in an effort to get to the bottom of things, we ask the same wise men a question once again, “Tell me . . . what does the Bible rest upon?” And they answer, “Well, the book rests upon the voice of God who has spoken to the writers of the book.” And we think about this for a little while and again we begin to feel uneasy about how a transcendent God out there spoke to these writers. After all, the scriptures weren’t created the way Cecil B. DeMille pictures it in his movie *The Ten Commandments*: Wizened old Charlton Heston, playing Moses, stands on the top of Mount Sinai, holds up stone tablets and a booming voice and lightning come out of a cloud, and words are written on the tablets. CRACK! “I am the Lord thy God, thou shalt not have strange gods before me.” You can almost smell the sulphur. “CRACK! Thou shalt not take the name of the Lord thy God in vain.” Today we recognize that the words of the Bible reflect the experience of the people of Israel and of a worshipping Christian community—but it all seems so far away.

We want a spirituality that is relevant, that will help us deal with the problems that confront us on a day-to-day basis—and no problem is larger or more relevant than biocide, the destruction of the very life-support systems of our Earth. And yet most churches have had little to say about this.

Some people are abandoning the organized religions they were brought up in and are striking out on their own. Many of them seem to be

gravitating to an Earth Spirituality outside the church. Others are trying to make their churches and their own spiritual journey more relevant by creating a balance between a redemptive emphasis and an incarnational emphasis—a Creation Spirituality. It is amazing to me the number of religious orders of nuns within Roman Catholicism that have embraced this approach, redefined their missions and opened eco-spirituality centers around the world. And, if you ask these wise women what the Bible rests upon, they will tell you that it rests upon Earth—all the way down.

What Is a Spirituality?

Let’s now pause a moment to determine what a spirituality is—and then consider why so many people on a spiritual journey seem to be coming to a spirituality of Earth.

Spirituality is a place within us where we wrestle with the great life questions. Who are we as a species and as individuals? Where did I come from? Where am I going in my life? Do I have a purpose—and if so how do I know what it is? And how does my future relate to this beautiful planet we live on?—a critical question as we are witnessing the destruction of our planet’s life-support systems.

Spirituality is a place where we come into contact with creative forces, where we learn to dream, have visions, share in the dream of Earth and learn to express ourselves in mean-



ingful ways—through our work, our play, our music, our writing, our art.

Spirituality is a place of reality and relevance. It is not a warm fuzzy feeling detached from day-to-day existence. It is a place where we recognize the harshness of nature, as well as its beauty, and the harshness of human life and well as its grace and meaning.

Spirituality is a place that gives full reign to our intellect and consciousness. It drives us to seek answers, it helps us to recognize mystery and live comfortably with mystery . . . when there are no answers.

Spirituality is a place of prayer—a much ridiculed phenomenon in our modern world. I take prayer seriously as an essential aspect of my spirituality, and I smile whenever I think of the comedienne Lily Tomlin's wry observations about prayer and the scepticism it often confronts. "Why is it," she asks "that when we talk to God we call it prayer, but when God talks to us we call it schizophrenia?"

Spirituality is a place of ritual where, through continual practice and participation, we are able to discern spirit. For some, this means coming to religious gatherings, to others it might be their work in organizations, to still others it may mean having a meal with their families and looking across the table into the eyes of their children or grandchildren. Many people seem to express their spirituality down on their knees in their gardens.

Spirituality is a place where we go for courage and strength and healing. It is a place that helps us make the critical transitions in our life: from sickness to health or from health to sickness; from a sense of community to the loneliness we experience with the loss of our loved ones, from loving relationships to the breakdown of relationships and the courage to face the pain of separation.

Spirituality is a place of hope where we learn to face the future and come to believe, as Vaclav Havel put it so well, not that things will work out the way we want them to work out but that, no matter how things work out, it will be all right.

Spirituality is a place of communion, with the divine, whatever that might mean for us, with Earth and its species, with our fellow humans who are sick, suffering, or facing discrimination. Spirituality is what turns our sense of justice into a commitment to help change things.

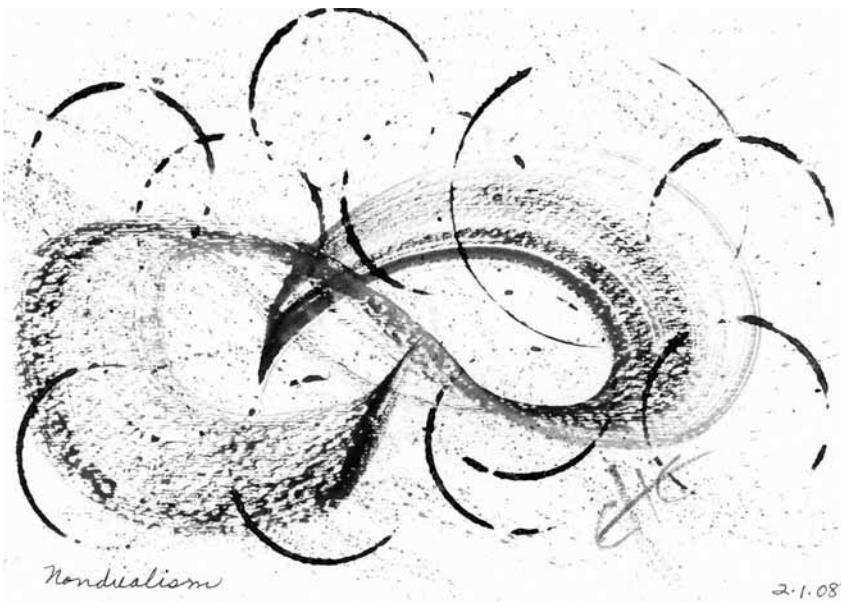
Finally, spirituality is a place of preparation for that day when our present personal story comes to an end and our new story begins as we return to the living Earth and universe from which we have come.

The Nature of a Spirituality of Earth

I would now like to turn to some basic principles of a spirituality of Earth.

On one of my trips down to see Thomas Berry in North Carolina, a Roman Catholic priest, cultural historian and geologist, I asked him a question. I told him that many people in the Canadian Arctic where I work were interested in an Earth-based spirituality. I asked him if he had ever written anything on an Earth-based spirituality. He paused for a moment and said, "No I haven't. But I have written something on the spirituality of Earth that you might find interesting." I realized that his response was his subtle way of teaching me my first lesson.

The way I asked the question suggested that there was a human spirituality that used Earth as a resource, perhaps for our personal meditation: the beautiful sunsets, the roaring oceans, the grandeur of the mountains, the lush forests, the wonderful diversity of



species. Thomas was teaching me that there is no human spirituality apart from Earth spirituality. Human spirituality is part of an Earth spirituality. There is only one spirituality. For Thomas, spirituality is a way of being in which not only the divine and the human commune with each other; but in which we discover ourselves in the universe and the universe discovers itself in us.

The concept of a spirituality of Earth is based upon a few principles that are profound in their implications.

First, we are part of Earth because we have come from Earth. Modern biology tells us that our bodies are 50% to 65 % water. Just like the oceans and the rivers and the falling rain, we are part of the irrigation system of Earth. The rest of our bodies consist of minerals, the same minerals we find in the crust of Earth, the same minerals that we find in the stars and the exploding star that gave rise to our Earth. In a real sense, the stars are our ancestors. In our modern world where so many Christians insist on a literal interpretation of the scriptures, I've often wondered why they do not take literally the words of the creation myth in Genesis: "Then the Lord God took some soil from the ground and formed a man out of it; he breathed life-giving breath into his nostrils and the man began to live." (Gen. 2:7)

Second, we are one with all the creatures upon Earth. We now know that we share 96% of our DNA in common with chimpanzees. Though we differ from other creatures in our mode of existence, the same Earth has given birth to all of us. In a sense, the animals of Earth and the fish of the seas are our relatives. As Thomas has expressed it: "We are not a collection of objects, we are a communion of subjects."

Third, what distinguishes us humans from all other species is our unique consciousness—our ability to reflect upon ourselves and the world around us. And where did this consciousness come from? It came from where the rest of us came from—Earth. It was the Jesuit palaeontologist, Teilhard de Chardin, who first noted that Earth was not only a physical reality, it was a psychic reality

from the very beginning. Human consciousness is the universe and Earth reflecting upon itself. We are Earth become conscious.

Fourth, we are spiritual beings and our spirituality, like our consciousness, has also come from Earth. Earth is endowed with an innate spirituality. This concept is not something new. For centuries, going back to the time of Plato and later to the time of the Roman Stoics, we find the concept of the *anima mundi*: the soul of Earth. So our human spirituality is a manifestation of the spirituality of Earth.

Now we come to the fifth and final proposition—Earth is revelatory. Earth reveals itself to us and we must listen and learn from Earth. For 25 years I have been listening to the Inuit and Dene elders of the Arctic telling their young people and anyone else who will listen: "Learn from the land. It will tell you and show you what to do." For years, because of my arrogance, I failed to understand what they were saying. Now I think I understand. If I can dazzle you with a bit of Latin, there is an ancient adage that says, *Nihil in intellectu quod non prius in sensu*. It means, "There is nothing in the intellect or in our minds that is not first in our senses." This means that we have no concept of God or the divine that hasn't come to us through our awareness of the world that surrounds us. We live on Earth. It is the beauty, the magnificence, the bounty, and the healing properties of Earth that lead us to an understanding of a divine power.

Over time, I have come to change the way I think of spirituality. I once thought the question "What is the nature of spirituality?" required a long, theological explanation. Now I answer the question quite simply. My spirituality is the manner in which *nature is manifesting itself* through my consciousness, relationships, prayer, work and spiritual practices.

Witnesses to the Spirituality of Earth

One may wonder if a spirituality of Earth is real, whether it actually transforms the lives of people? The best way I have to respond is to tell you stories about people I know or have heard about whose lives have been transformed. I'd like to tell you three of these stories.

Several years ago I got a call in my office in Yellowknife. The man on the other end of the line spoke with a lovely Irish accent. "Hello. Is this Mike Bell?"

I said, "Yes, this is Mike Bell."

"Look," he said, "I'm ringing you up from Dublin, Ireland. We've been reading this article you wrote on 'Community Development and the Ecology of Spirit.' We don't know where we got it, but we were wondering if you'd be willing to come over here and do some workshops on community development."

I said "Yes " and a few weeks later I found myself in the slums of downtown Dublin—in an area known as the canal communities.

The people in this community were being replaced by an urban development project. The organizer showed me the tenement buildings where most of the people still lived. We climbed cement staircases, open to the air that went up six stories. I hadn't seen tenements like that since I worked as a volunteer in New York's Spanish Harlem. The corridors were filthy: the walls were covered with graffiti, dank pools of water were in the corners, garbage, broken liquor bottles and needles from the heroin trade were everywhere. The apartment doors were huge, and many were scarred from various attempts to kick them in.

Then the organizer showed me their pride and joy, a line of small row houses that they had successfully found funding for and developed. They took me around to meet some of the residents. In one house we were invited in by an elderly woman. The organizer said to the woman, "Mary, what do you like most about your new house?"

I thought she would give me a tour of the house, or tell me about the safety she now felt, or the lack of drunken screaming all night long, or people trying to kick her door down. But she didn't. She motioned to us, led us back out onto the porch and looked down over the railing on her porch. I looked down and saw a small strip of Earth about ten feet long between the sidewalk and the edge of the house. And there growing in Earth were a few geraniums and pansies. She smiled at me, her eyes glistening with pride, and said, "I now have a garden."

Here's another story. Several years ago a close friend of mine, a consultant and colleague, was dying and in the final stages of cancer. Her husband called me from the hospital. He said to me, "The doctors have agreed to let Ann go home on the condition that she find a spiritual counsellor. We told them we had one." I asked him who it was. He said to me, "You." And I said to myself, "I'd better get down there."

Ann and her husband lived in a beautiful house, in a rural area of southern Alberta. The house was perched on the edge of a ridge and had a spectacular view of the trees on the hillside below and the fields beyond.

When I got to the house, the husband took me aside. "I'm worried," he said to me. "I thought Ann believed what I believe, what we were taught as kids growing up" —he was the son of a minister—"but she doesn't believe in any of those things."

When I went in to the living room to see Ann, she was sitting on a sofa looking out through their large picture window. After she welcomed me she said, "Did you talk to my husband?" I nodded. "He's worried about me."

I said, "I know."

She said, "Mike, I don't know about any of those things we learned about growing up. But when I look out that window, and see the beauty of what surrounds us, that's what tells me there is a God. Please tell my husband not to worry. I'm ready."

Ann died a few weeks later. We held the funeral in a little church out in the midst of the farmers' fields on a beautiful, sunny, August morning. In the eulogy I quoted the words of the great Blackfoot chief, Crowfoot, who, a century earlier, was reflecting on his own death in a place not very far away from we were holding the service. He said, "*What is life? It is the flash of a firefly in the night. It is the breath of a buffalo in the winter time. It is the little shadow which runs across the grass and loses itself in the sunset.*"

Years ago I read the story of a woman in a book called *Man's Search for Meaning* by Victor Frankl. I've never forgotten it.

Frankl was a psychiatrist who was sent to Auschwitz, the Nazi death camp. The first

part of the book tells about his horrifying experiences: about lining up naked in front of brutal guards who would decide on a whim whether you would go out on a work detail or go to the gas ovens; about prisoners with terrible wounds trying to convince the guards that they were still strong enough to work; about a camp life where cigarettes were the currency because one could use them to buy a potato or a bit of cabbage. He told about returning from day-long work details and seeing fellow prisoners sitting on their bunks, smoking their cigarettes, a sure sign that they had given up hope and decided to die.

In the midst of these pages of horror, there is a beautiful story. Frankl was called to the side of a young woman who was dying. He writes,

It is a simple story. There is little to tell and it may sound as if I had invented it: but to me it seems like a poem.

This young woman knew that she would die in the next few days. But when I talked to her she was cheerful in spite of this knowledge. "I am grateful that fate has hit me so hard," she told me. "In my former life I was spoiled and did not take spiritual accomplishments seriously." Pointing through the window of the hut, she said, "This tree here is the only friend I have in my loneliness." Through that window she could see just one branch of a chestnut tree, and on the branch were two blossoms. "I often talk to this tree," she said to me. I was startled and didn't quite know how to take her words. Was she delirious? Did she have occasional hallucinations? Anxiously I asked her if the tree replied. "Yes," she said. What did it say to her? She answered, "It said to me, 'I am here—I am here—I am life, eternal life.'"¹

I wish to conclude with a quotation and a prayer.

Each year when I begin a new pocket calendar to keep track of my appointments, I write this sentence, a quote from Teilhard de Chardin, on the first page. "*We are not human beings on a spiritual journey; we are spiritual beings on a human journey.*"

The prayer comes from the Lakota people. On this continent, it is the aboriginal peoples who have always kept the flame of a spirituality of Earth alive.

*"Oh Great Spirit, our Creator
All over the world the faces of living ones
are alike,
With tenderness they have come up out of
the ground.
Look upon your children,
That they may face the winds
And walk the good road to the Day of
Quiet.
Fill us with the Light,
Give us the Strength to understand, and
the eyes to see
Teach us to walk the soft Earth as rela-
tives to all that live."*²

¹ Victor E Frankl, *Man's Search for Meaning*, (New York: Washington Square Press, 1959), 90.

² Adapted from the Lakota Prayer, in Elizabeth Roberts and Elias Amidon, eds., *Earth Prayers from Around the World: 365 Prayers, Poems, and Invocations for Honoring the Earth* (New York: Harper One, 1991).

By Cosmic Design, I Confess

BY JOHN P. COCK

By Cosmic Design?*

On the way forward from our past,
this cosmological age
highlights awesome seasons
that birth rituals
and daily sunrises and sunsets
that spiritize existence,
sanctifying early mornings
with meditation
and late evenings
with reverie:

parents reading to and
cuddling with their children,
answering big questions,
rubbing backs and humming
as the little ones slip into
Earth's dark, sacred night.

Are we not spiritual
by cosmic design
and for cosmic reason?

Prescript

We could go out of being as a people
the same way we came in –
by an asteroid crisis.
We could go out of being
by a military-nuclear crisis,
a global warming crisis,
a potable water crisis.

Yet, we'd rather live here than not.
I confess it's a sacred place –
the only one we know.
Grace, love, beauty, meaning, and care
are in this place. Why look for another?
Let us cherish and honor this place
as the good place it is.

How do we know it to be a sacred place?
Consciousness over thousands of years
has testified to it,
beholding the sacredness
of a blade of grass,
a sensual touch,
and the good journey.

With given consciousness
we intercommune with creation
and commune with its heart.

With given consciousness
and with sacred inclination
we come to see and know
and bow to all as thou.

I confess that by cosmic design
mysterious, awesome, transparent,
numinous, eternal, universal, transforming,
gracious power is always present;
and we – past, present, and evolving –
perceive and experience sacred
power at the center of this place.

Our microcosmic reason for being here,
our bounden duty as subjects?
To sense the meaning of the sacred
and serve its power
in the cosmos forever –
or till we are no more
in this wondrous place.

* John P. Cock, April 2001,
from *Our Universal Spirit
Journey: Reflection and Verse
for Creation's Sake*; later
published in *By Cosmic
Design: Spirit Poems* (1974-
2006).

The Teaching

Mircea Eliade, as the prophet, reminded us that our aboriginal ancestors had a sense of the sacred that we do not share, and if we do not recover their depth understanding, and more, there may be no human future— especially if we, to use Eliade’s word, “desacralize” life in this world by rejecting the cosmic dimension that gives meaning.

One of his favorite illustrations of the manifestation of the sacred is Moses taking off his shoes in awe before the burning bush. His holy-ground experience is a paradigm for our journeys. As such happens to us, we too bow and declare any place as sacred. Like Moses, we experience awe: through viewing the rising or setting sun; seeing the universe through a microscope or a telescope; feeling intimacy with a special one; assisting in the birth of a child; being at the graveside of one we love; appraising our earth community’s future; suffering the tragedy of 9/11; watching Katrina. Such events bear out the profound power in the cosmos.

Such power comes as blessing or terror. Through either, we experience the sacred and sometimes even transformation, unity, and centeredness. *Mysterium tremendum* that trembles, thrills, and alters our being is the power that winks at modern attempts to reduce truth to scientific and historical fact. These facts are immensely helpful, but they hardly guide our journey as does primal, cosmic power. Sacred moments of transparent consciousness beckon us to see through to and bow to the power from the heart of the cosmos.

Consciousness is our cosmic antenna. We become aware of what is happening to us by consciously reacting to, reflecting on, and taking a relationship to what was and is really going on. Summing up this total event of consciousness, Kierkegaard wrote that we perceive and experience the power that “posits” or constitutes us as free beings who can choose to embrace our journeys fully. Meaning is the result.

Meaning that comes from cosmic eventfulness through given consciousness and intentional choice nurtures us. Stored up wisdom of the goodness of life deeply sustains us. Through reflection, we come to understand that sacred meaning is always at hand in abundance. We not only perceive and experience meaning, but we also create, express, and engage in meaning – through operating images, worldview, myths, stories, symbols, rituals, art, and language. As meaning-reliant mammals in the cosmos, we come to see that experiencing meaning, creating meaning, and sharing meaning are what we are about as self-conscious beings.

The Confession

I confess cosmic procreation from the initial flaring forth, to stardust, to self-conscious beings who have most recently joined the cosmic journey.

I confess I am a born and bred micro-cosm, as is everyone and everything else.

I confess I trust the cosmos, that has been working well to sustain all in being for umpteen billions of years.

I confess I am fulfilled in the cosmos as I realize my place in it, relate to it, and create with it.

I confess that I am one with the heart of the cosmos amidst the cosmic swirl that was, is, and is becoming.

Postscript

From the cosmic center
we don the style that heals
divisions in our profane relations.
This stance during Earthly crises
keeps our species from going extinct.
‘Tis the sacred way
to live in our sacred place.

Law and Cosmology: An Earth Jurisprudence*

BY HERMAN F. GREENE

Law expresses a temporal consensus on the order of society and this consensus is derived from a society's values. Law is never simply a matter of rules; it is imbued with a sacred dimension. Rules of law are richly bound in books embellished as holy texts. Judges, like priests, come robed to court. Lawyers are sworn by oath to uphold the law and each court hearing begins with a ceremony invoking a spirit of reverence. Ordering principles are important, the very life of society depends on it.

"Jurisprudence," in English, has two meanings. Its first meaning is the philosophy of law. This is the study of the basis of law. Its second meaning is a division of law. For example "education law" would be a division of law, which is to say of jurisprudence. In this paper I am primarily using jurisprudence in the first sense because the topic of this paper, Earth Jurisprudence, concerns the basis of law, not a division of law. Earth Jurisprudence has a relationship to environmental law, but it also has a relationship to other branches of law, such as commercial law, tort law and constitutional law. Environmental law is both included in Earth Jurisprudence and would be transformed by it. Environmental law is not identical with Earth Jurisprudence.

"Earth Jurisprudence" is not a term with an established meaning. The term was introduced in April 2001 when the London-based Gaia Foundation invited a small group of individuals from various parts of the world to meet with Thomas Berry¹ at a conference center in Northern Virginia, just outside of Washington, D.C., to discuss the feasibility of developing an Earth Jurisprudence. Since that meeting, other small conferences have been held² and a book has been published on the subject by Cormac Cullinan of South Africa

entitled *Wild Law: A Manifesto for Earth Justice*.³ The major premise of the book is that we as humans have our written laws and we call that "the law." There is, however, another kind of law and it comes from the dynamics of Earth that create and sustain life. Cullinan calls this "the Great Jurisprudence."

Further, there are now two centers of Earth Jurisprudence, one associated with the Gaia Foundation in London and one a collaboration of two law schools in Florida: St. Thomas University Law School in Miami Gardens, and Barry University Law School in Orlando. The Earth Jurisprudence Center in London defines this subject as a "system and jurisprudence based upon the concept that the planet and all of its species have rights—and they have those rights by virtue of their existence as component members of a single Earth community."⁴ The Center for Earth Jurisprudence in Florida offers this more extensive statement:

Earth Jurisprudence is a newly emerging field of law based on a recognition of and respect for the rights of nature. It is related to many current fields of law, including environmental law, animal rights law, rights of indigenous people, and jurisprudence. The distinctive features of Earth Jurisprudence are that it looks at law from the standpoint of the health of ecosystems and the role humans play as an integral, interdependent member of a single, comprehensive Earth community. Earth Jurisprudence focuses on how legal norms may be established and disputes may be settled involving human-Earth relations. It opens the door to a fundamental rethinking of the basis of law.⁵

*This paper was prepared for and delivered at the conference on "Law, Politics, and Morality in Constructive Postmodern Perspective" held on July 8-9, 2007, at Chinese University of Political Science and Law (Zhengfu University), Beijing, China.

¹ Thomas Berry is the author of *The Dream of the Earth* (San Francisco, CA: Sierra Club Books, 1988); *The Universe Story* (San Francisco: HarperSanFrancisco, 1992) (co-authored with Brian Swimme); *The Great Work* (New York: Bell Tower, 1999); and *Evening Thoughts* (San Francisco, CA: Sierra Club Books, 2006).

² For a list of conferences, see www.earthjurisprudence.org; "Earth Law: Background" (accessed June 19, 2007).

³ Cormac Cullinan, *Wild Law: A Manifesto for Earth Justice* (London: Green Books, 2003).

⁴ See www.earthjurisprudence.org; "Earth Law: Principles" (accessed June 19, 2007).

⁵ See <http://www.earth-juris.org/home.htm>; Internet (accessed June 19, 2007).

Earth Jurisprudence Involves Rethinking the Basis of Law

In this paper I would like to go through that door to fundamentally rethink the basis of law based on Earth Jurisprudence. A new source of “common” law is needed for our now globalized and integrated society—integrated with the entire Earth community.

Our Historical Situation

I believe we are at a turning point in history. Human history in broad outline begins with the appearance of our species, *homo sapiens*, 250,000 years ago. Around 30,000 years ago language and symbolic communication developed. Ten thousand years ago agriculture gave rise to Neolithic villages and began what we call “civilization.” Around 3,000 years ago the classical civilizations arose. In a stunning period of only a few hundred years, the Hebrew prophets, Socrates, Plato, Aristotle, Gautama Buddha, the Hindu mystics, Confucius, Mencius and Lao Tzu gave birth to the ideas and religious traditions that undergirded these civilizations.⁶ Around 1,500 years ago a feudal period began. Five hundred years ago, starting in the West, the modern period began and only a little over two hundred years ago, the industrial revolution.

Out of this have come our contemporary civilizations,⁷ which Samuel Huntington identifies as follows: (1) *Sinic* or Chinese civilization, which dates back to at least 1500 BCE. Confucianism is a major aspect of this civilization yet it is more than this and its boundaries extend beyond China to include Chinese communities in Southeast Asia as well as the related cultures of Korea and Vietnam; (2) *Japanese*, an offspring of Chinese civilization, yet distinct, which emerged around 100 CE; (3) *Hindu* (referred to also as Indian or Indic) the dominant civilization in the subcontinent of India since 1500 BCE; (4) *Islamic*, a civilization that began in Arabia in the seventh century CE and extends today from North Africa to Southeast Asia; (5) *Orthodox* a civilization centered in Russia and distinct from the West as a result of its Byzantine parentage and Orthodox Christian religious heritage and its “limited exposure to the Renaissance,

Reformation, Enlightenment and other central Western experiences”; (6) *Western* a civilization emerging around 700 CE and having three major expressions, European, North American and Latin American. (7) *Latin American*, an offspring of Western civilization but differing in its incorporation of indigenous cultures, its lack of exposure to the Reformation and its “corporatist, authoritarian culture”; and (8) *Sub-Saharan African* with its blend of tribal and colonial cultures and an emerging African identity.⁸

Huntington also identifies the emergence of a “universal culture”⁹ based on Westernization, modernization and industrialization and raises the question whether this is an emerging universal civilization. This globalized culture has become the central problem because it lacks the characteristics of a cohesive civilization, yet much of the world’s centers of power, especially economic, scientific, technological and military centers, are dominated by it.

Chuichiro Hirose of Japan writes about how this universal culture is disrupting the order of the contemporary civilizations:

The global expansion of information, communications and transportation resulting from advances in science and technology has turned not only the economy that deals with goods and services but also the various forms of knowledge and culture of the world into simultaneous platforms in terms of both time and space. As a result, the artificially and forcefully created “compression” and “chaos” on a global scale threatens immediately cultural diversity and respect for the values of each culture.¹⁰

He continues:

[T]oday’s globalization is a historical extension of a diversity of civilizations and cultures. By being almost instantaneously cast and by expanding at an historically hyper-accelerated rate into the “present location” in line with the Western European civilization and culture, today’s globalization has become a phenomenon

⁶ The German philosopher Karl Jaspers called this the “Axial Age” because the history of civilization turned upon it. For a thorough treatment of this period and its significance, see Karen Armstrong, *The Great Transformation: The Beginnings of our Religious Traditions* (New York: Alfred A. Knopf, 2006).

⁷ Samuel Huntington gives these characteristics of a “civilization”: “A civilization is the highest cultural grouping of people and the broadest level of cultural identity.” Samuel Huntington, *The Clash of Civilizations and the Remaking of World Order* (New York: Simon & Schuster, 1996), 43. A civilization involves “the values, norms, institutions, and modes of thinking to which successive generations in a given society have attached primary importance.” *Ibid.*, 41, quoting Adda B. Bozeman, “Civilizations under Stress,” *Virginia Quarterly Review*, 51 (Winter 1975). A civilization is “comprehensive [which is to say] none of the constituent units can be fully understood without reference to the encompassing civilization.” *Ibid.*, 42. “Religion is a central defining characteristic of civilizations.” *Ibid.*, 47.

⁸ *Ibid.*, 45-47.

⁹ See generally Chapter 3 on “A Universal Civilization? Modernization and Westernization,” *Ibid.*, 56-80.

¹⁰ Chuichiro Hirose, “The Turning Point of Western European Civilization—The Capitalist Economic System and the Global Environmental Problems,” *The Ecozoic Reader* 4, no. 3 (2005), 16.

that occurs simultaneously in both time and space dimensions in the world. It is as if by having time, and cultural and environmental differences “compressed,” civilization has fallen into a “chaotic” condition. This compressed chaos . . . has yet to be unified into a shape with a central core. After going through a number of processes including adjustment, adaptation, separation, and integration, a meaningful future form of civilization will emerge from this compressed chaotic situation¹¹

This compression and chaos has another source, however, and it is nature. To understand this we must also look at history from a geo-biological standpoint. Five billion years ago our planet Earth came into being. Four billion years ago the incredible phenomenon of life turned our planet into a shining blue marble in a vast universe with no known equivalent. Five hundred million years ago all of the major phyla of animals came into being in the miraculous Cambrian explosion. Sixty-seven million years ago following the death of the dinosaurs, our present Cenozoic Era, the age of mammals, began.

Nature unfolded outside human influence through most of this vast period of time. Since, the industrial revolution, however, and especially in the last 50 years¹², humans have caused massive changes in the Earth. As Norman Myers and Jennifer Kent write: “We are the first species to have become a geophysical force, single-handedly altering Earth’s atmosphere and climate. We have initiated the sixth great extinction spasm of geobiological history by the massive destruction of ecosystems and the loss of plant and animal species.”¹³ Further we remain in a state of exponential growth in terms of population, consumption and human impact on the environment.¹⁴

Convergence of Humans and Nature on a Global Scale

The same force that has led to a globalization of culture with its attendant compression and chaos in relation to our classical cultures or civilizations—namely the modern industri-

al, technological market economy with its supporting intellectual and institutional framework—has led to the global colonization of nature with attendant compression and chaos in relation to species and ecosystems. The future of human civilization and the future of nature (of species and ecosystems) have merged.

We are at a turning point in human history. The time in which nature functioned relatively autonomously in relation to the human community has ended.¹⁵ In the human dimension, globalization fits uneasily into the established patterns of culture. The future will have to be worked out in the context of the convergence of these two realities where human and nature have become inseparable and globally integrated.

Inadequacy of Modernity and Neo-Traditionalism as Responses

Our laws, the ordering principles of our societies, were not designed with these convergent realities in mind. This is why there is a need for a fundamental rethinking of the basis of law. This is not a rethinking for the sake of nature alone, it is a rethinking to enable, as Chuichiro Hirose suggests, the adjustment, adaptation, separation, and integration of the values and norms of historical civilizations into a meaningful future form of civilization for the benefit of all beings.

There are necessarily ongoing efforts at such adjustment. The efforts tend to follow two paths: One is the path of adapting traditional cultures to modernity (“modernization”), and the other the turning away from modernization to traditional values and culture (“neotraditionalism”). Both of these paths are reflected in the development of law. The trend in international commercial law is toward modernization. Yet, at the same time, in the Islamic world, there is a broad movement to strengthen traditional Sharia law, even in codes of commercial law.

Neither modernization, nor neotraditionalism is a satisfactory path to the future. The values of modernization, such as human rights, individualism, freedom, rule of law, pursuit of profit, market-based economic prin-

¹¹ Ibid., 19-20.

¹² This is a minuscule period within the geo-biological time scale—only 1/100,000,000th of Earth’s history.

¹³ Norman Myer and Jennifer Kent, *The New Atlas of Planet Management* (Berkeley, CA: University of California Press, 2005), 8

¹⁴ Ibid., 14.

¹⁵ Thomas Berry calls this the end of the Cenozoic Era because humans have irrevocably interfered with the geo-biological dynamics that were characteristic of that era. This is causing the sixth mass extinction in Earth’s history. Berry calls for an “Ecozoic Era,” a time of conscious human participation of humans in evolutionary processes as the successor to the Cenozoic Era. He also notes that the ending of a geo-biological era is a unique event in human history, the last such event occurred 67 million years ago with the ending of the Mesozoic Era. Thomas Berry, *The Great Work*, 3.

principles, consumerism, rationalism, pragmatism, and the importance of science and technology largely originated in the West. In their globalized form, however, these values are shallow because they are separated from the humanistic and religious traditions of the West, which both gave them birth and to which they were a response. Being separated from these traditions, they may promote secularism, materialism, individualism, hedonism and anthropocentrism and come into conflict with the traditions and values of other civilizations. Even in the West, modernization has been criticized on these grounds and has been a disruptive influence as well as a creative one.

Neotraditionalism is not strictly traditionalism, rather it is a reaction to modernity. Neotraditionalism seeks to look into the past to discover the principles to guide the future. Fundamentalist and neo-conservative movements around the world are expressions of neotraditionalism. Neotraditionalism may be successful for a time in rolling back influences of modernity, as for example has happened in Iran under the ayatollahs and in Afghanistan under the Taliban. Even in the United States we are seeing a strong neo-conservative reaction to modernity. Yet, it is difficult to be hopeful about the efforts of the neotraditionalists because they are prone either to look back and recreate a past that never was, or to restore a past that was a proper response to its time, but is inadequate for ours.

The Need for a Third Way

This interaction among traditional cultures, modernization and neotraditionalism will continue unavoidably. I think there, however, is no resolution of the conflicts that result, even if we take into account only the human dimension. Taking into account the convergence of humans and nature though, the prospects are especially dim and we must look for a third way.

I will describe some of the requirements for such a third way and then I will name four constructive features of what I believe to be this third way, namely "Earth jurisprudence."¹⁶

The Requirements of a Third Way

The requirements of a third way are that it must deal with the problems arising from the convergence of traditional cultures and universal civilization, and the convergence of humans and nature on a global and local scale.

Four Constructive Elements of Earth Jurisprudence

I believe Earth Jurisprudence meets these requirements. I will explain how by discussing four constructive elements of Earth Jurisprudence. These elements are as follows:

Earth Jurisprudence

- Is cosmologically (ecologically) grounded
- Recognizes and protects the rights of other-than-human beings
- Provides standards of conduct based on a new Gaian humanism
- Is locally and globally integrated (justice and equity)

I will only cover the first of these elements in this paper.

Cosmological Grounding

As we have already noted, we are in a time of confusion. Our traditional groundings are no longer regarded as having universal applicability and they often conflict with modern principles and contemporary aspirations. People in each of the contemporary civilizations cannot be confident in their conclusions because they are grounded in traditional ways of understanding things and yet must cope with the ideas of modernity. One might say, "We are cut off from our roots."

Elimination of Value and Meaning Categories in the Universe

The philosopher E. Maynard Adams offered profound insight into why this is so. Modernity is at heart a product of the science that emerged in the West beginning in the 15th century of the Common Era and has con-

¹⁶ One may wonder if the philosophical considerations that follow in this paper are relevant to law, which is often seen as a set of neutral, value-free rules. I have come to the conclusion that a philosophical reassessment of the basis of law is needed. I did this over the last two years in my work with the Earth Jurisprudence Center in Florida as I thought about (i) the importance of law, (ii) how it affects the ordering of society, and (iii) how it is the embodiment of a society's values. In other words, I came to realize that law is not value-free, but rather is value laden. Further, I became convinced that legal theory and value analysis (in other words, jurisprudence) belong in the legal profession and in the teaching of law. In my own development as a lawyer, I was never taught jurisprudence, the philosophy of law, I was only taught the practice of law. I don't know if the situation is similar in China or not. In any event, even if I had been taught jurisprudence, it would not have been the Earth Jurisprudence described in this paper.

tinued to grow and expand in the West and elsewhere to the present day. In Adams' view, the modern scientific account of the world eliminated value and meaning concepts as categories that described or explained reality. Without the reinstatement of these categories, he believed we are left only with political laws based only on ideological preferences without any claims to objective truth to regulate behavior.¹⁷

Let's go a bit further into this. In general, what Adams observed is science became such a powerful tool for manipulating and controlling nature and yielded such benefits that only those aspects of knowledge that promoted these capacities were regarded as veridical. Chief among these aspects is the idea that an event "is caused by the environmental, elemental, or antecedent factual conditions that necessitated it."¹⁸ This is the "naturalistic" concept of causation that undergirds modern science. It stands in opposition to the teleological concept of causation, the idea that something happens for the realization of an end (for what ought to be). Adams argues, this choice of naturalistic over teleological causation was not based on empirical discoveries.¹⁹ It occurred primarily because of a shift in purposes for which people sought knowledge; that is, because of a change in the dominant conception of the human enterprise. The modes of experience in which normative, value, and meaning concepts are grounded do not yield the kind of knowledge that is useful in our materialistic pursuits. And so they were discredited as knowledge-yielding modes of experience.

And with this shift in our ontological categories for understanding reality, our understanding of the universe shifted. Adams wrote:

[T]he scientific account of biological evolution and of the development of the physical universe in general is that it is a blind process, with no ends involved; it is not a becoming, not a process fulfilling or realizing an ought. The causality in the process is not teleological. The dynamics of the universe do not work toward the real-

ization of an order of goodness. In other words, the scientific account of the origin and development of the universe is cast in terms of a world-view in which there are no ends, normative laws, or value structures in nature. Whatever happens is the consequence of elemental, environmental, or antecedent factual conditions, without the pull or constraint of an end in view or a normative requirement.²⁰

Remi Brague in *The Wisdom of the World: The Human Experience of the Universe in Western Thought*,²¹ makes a similar point. He wrote "The image of the world that emerged from physics after Copernicus, Galileo, and Newton is of a confluence of blind forces, where there is no place for consideration of the Good."²² The stars, for example, no longer reflect the order of heaven, an ethical model to which one is to adapt oneself, but rather lack any significance until some new theory accounts for the facticity of their existence. To the extent that post-Copernican science reveals a truth about nature, it is of its moral indifference. Further, in this modern view humans appear as no exception to the new laws of nature. Morality has been reconceived, in the liberal movement, to emulate amoral nature's pursuit of self-interest as the way to the good; in various strains of existentialism, as a protest against nature's indifference; or, in reactionary circles, as an "unworldly" adherence to traditional, ideological, or religious values.

As a result of this, modern thought has had a bias toward an acosmic, nonmetaphysical, nontheistic account of the world. Further, the ethical value of cosmology has been neutralized because of the conception of nature as amoral or even immoral.²³

Cosmology as the Common Ground—Reinstatement of the Categories

This being the case, it may seem unlikely that I would propose cosmology as the basis for a third way. I do this because we need a common ground that transcends our differences. We know there is no common ground for our globalized society in the tenets of

¹⁷ E. Maynard Adams, *A Society Fit for Human Beings* (Albany, NY: State University of New York Press, 1997), 28.

¹⁸ E. Maynard Adams, "Is Science Really Compatible with Religion?" *The Ecozoic Reader 2*, no. 3 (2002): 28.

¹⁹ It could not be arrived at empirically, because "[i]t is part of the conceptual framework that makes empirical investigations possible." *Ibid.*, 28. In other words the concept of causation is presupposed.

²⁰ *Ibid.*, 30.

²¹ Brague, Rémi. *The Wisdom of the World: The Human Experience of the Universe in Western Thought*, Teresa Lavender Fagan, trans. (Chicago: The University of Chicago Press, 2003).

²² *Ibid.*, 185.

²³ *Ibid.*, 194.

modernity or of those of neotraditionalism. Some believe we may find a common ground in a global religion or political theory, or in commerce, but I do not think so. I believe our common ground can only come through cosmology, because the universe (and Earth as our place in the universe) is what we truly do have in common. But cosmology will be unifying only if understood as value-laden, purposeful and meaningful, that is if it is understood through the ontological categories that Adams rightly stated have been eliminated from the modern descriptive/explanatory framework of the universe.

So my argument for cosmology as the common ground for a third way is that there is no common ground other than cosmology. Then I argue that if the cosmology is the amoral cosmology of modernity, then it will not serve as the unifying influence needed for a third way. So the question becomes, how may we understand the universe to be meaningful? This is possible now in a way it was not before. It is possible through the phenomenological awareness of a meaningful universe, through post-modern science, through process metaphysics and through authentic recovery of traditional insights into cosmology. Separately I will discuss ecology as a functional cosmology.

Phenomenological Awareness of a Meaningful Universe

When asked “What is cosmology?” one answer Thomas Berry gives is to recite his poem “It Takes a Universe.” The poem begins this way

The child awakens to a universe.
The mind of the child to a world of wonder.
Imagination to a world of beauty.
Emotions to a world of intimacy.
It takes a universe to make a child.²⁴

These are the primordial experiences that make us human—without “wonder,” Berry says we have no mind; without “beauty,” we lack imagination; without “intimacy,” we have no emotional bonding. These are given to us by virtue of being Earthlings. Earth is given to us by virtue of the evolutionary

developmental processes of the universe.²⁵

Phenomenology concerns the examination of our experience without consideration of what is objective reality or purely subjective response.²⁶ So to say one becomes phenomenologically aware of a meaningful universe, simply means that one finds this awareness to be present in one’s experience. Who, as a child or as an adult, has not had moments of awakening to a world of wonder, beauty and intimacy? Intuitively we know that such a universe has meaning.

Post-Modern Science and Meaning

It is possible, however, for one to become disconnected from this awareness or not to trust it. We are our minds as well as our awarenesses. We see things in the world that don’t correspond to wonder, beauty and intimacy. We are required to interact with our world to sustain ourselves and even to overcome threats to our existence. We may come to explain the world in a way that it lacks meaning and dismiss positive experiences of meaning as romantic or childish. As stated above, such an explanation was given by modern science beginning in the 15th century—the world was understood as composed of objects in motion that were subject to mechanistic laws of causation. In the biological world, Darwin introduced the ideas that the evolution of life was determined by random mutation and natural selection.

The science of the 20th and 21st centuries, both the physical sciences and the biological sciences, however, offer the possibility of understanding the universe that is consistent with categories of meaning. Instead of a clockwork universe, we have, through relativity theory and quantum mechanics, a much different picture of a dynamic universe with an element of uncertainty. In physical cosmology, we have moved from a picture of a static universe, which has always existed somewhat as we know it, to a universe that has a story, a universe that has evolved through time with surprising developments. In the biological sciences we have moved from reductionistic studies of nature to ecology, which in the words of Edward Goldsmith, understands

²⁴ Quoted by Thomas Berry in an interview with Caroline Webb. Carolina Webb, “The Mystique of the Earth,” *Caduceus* (Spring, 2003): 7; available at, http://www.caduceus.info/archive/59/59_archive.htm (accessed June 21, 2007).

²⁵ Thomas Berry says that if we grew up on the moon our minds, imaginations and emotions would be as barren as the moon.

²⁶ “Phenomenology” is defined as “1. The study of all possible appearances in human experience, during which considerations of objective reality and of purely subjective response are left out of account. 2. A [philosophical] movement based on this study, originated about 1905 by Edmund Husserl.” *The American Heritage Dictionary of the English Language*, 3d ed. (New York: Houghton Mifflin Company, 1992).

“living things [as] differentiated parts of the hierarchy of natural systems that make up the ecosphere, and the ecosphere has a critical structure which enables it to maintain its homeostasis in the face of environmental challenges and to provide each of its subsystems with an optimum environment.”²⁷ It has even been advanced in the scientific community, though not without controversy, that Earth as a whole is a kind of self-regulating organism. Evidence of this is that despite dramatic changes over millions of years in the climactic conditions on Earth and kinds and dispersion of species, the concentration oxygen in Earth’s atmosphere has been 20.7%.²⁸ Some refer to this 20th century science as post-modern because it differs from the mechanistic science of modernity. This science still seeks to discover patterns or laws of nature, but does so in a more holistic, interdependent, dynamic way.

Process Metaphysics and Meaning

Much of modern philosophy in the West has been an attempt to reconcile philosophy with modern science. An obvious example of this was logical positivism in which an attempt was made to say that nothing was true unless it was empirically verifiable or could be arrived at through logic. The subjugation of humanistic categories of understanding to those of naturalistic science led Maynard Adams to say that value and meaning categories have been eliminated from the descriptive/explanatory framework for understanding our universe. For there to be an intellectual defense for the reinstatement of these categories, there needs to be a philosophy that encompasses our experience and the understandings of contemporary science in a coherent, logical system. Such a system is referred to in philosophy as “metaphysics,” which we might pragmatically define (as I believe William James did) as thinking about the world in the broadest possible way.²⁹ In philosophy, cosmology is a branch of metaphysics, which is to say that ultimately, in a philosophical sense as opposed to a physical science sense, cosmology must be sustained by metaphysics.

Metaphysics has been problematic throughout the modern period. This is because of the difficulty of reconciling our human experience (including our conceptions of God and meaning) with modern science. Rene Descartes famously divided the world into mind and matter. Matter conformed to mechanistic science of modernity, mind did not. The problem since Descartes has been to integrate mind, matter, and the universe. Within the disciplines of education, the problem has been that of integrating the humanities and science. This has been more than an obscure, philosophical problem. It goes to the heart of how we are to understand ourselves as humans, how we relate to the world external to us, and the purpose of existence. Science, as Thomas Berry once observed, can measure the vibrations of the string of a violin, but science cannot hear the music. This brings us to the simple, but profound question: “Is the music real?”

There is a contemporary metaphysics that encompasses science and the humanities and reinstates the categories of value and meaning in the descriptive/explanatory framework of the universe. It is process metaphysics. The fundamental aspects of process metaphysics are creativity, organic change over time, interiority (pan-experientialism), and interdependence. There have been many philosophies that are based on process. Heraclites of ancient Greece, Lao Tzu (or Laozi) of China,³⁰ Sri Aurobindo in India, Henri Bergson and Teilhard de Chardin of France, and many others both ancient and modern based their thought on some or all of these process understandings. I would like, however, to call particular attention to the process metaphysics of Alfred North Whitehead.

Alfred North Whitehead was educated at Cambridge University and wrote on mathematics. Later he developed a keen interest in physics and proposed a relativity theory that was a rival to Einstein’s. He then turned to write on the philosophy of science and later general philosophy. His *magnum opus* was *Process and Reality: An Essay in Cosmology*.³¹ He described the work as “speculative philosophy” and defined this as “the endeavor to

²⁷ Edward Goldsmith, *The Way: An Ecological World-View* (Athens, GA: University of Georgia Press, 1998), 16.

²⁸ This is the “Gaia hypothesis” first developed by Dr. James Lovelock. He named this hypothesis after the Greek goddess, Gaia, the goddess of Earth. Today the Gaia theory is more commonly referred to as “Earth systems science” and focuses on “scientific models of the geo-biosphere in which life as a whole fosters and maintains suitable conditions for itself by helping to create an environment on Earth suitable for its continuity.” “Gaia Hypothesis,” *Wikipedia*, available at http://en.wikipedia.org/wiki/Gaia_hypothesis (accessed, June 16, 2007).

²⁹ “Metaphysics” is defined as “1. the branch of philosophy that examines the nature of reality, including the relationship between mind and matter, substance and attribute, fact and value. [and] 3. A priori speculation upon questions that are unanswerable to scientific observation, analysis, or experiment.” *The American Heritage Dictionary of the English Language*, 3d ed. (New York: Houghton Mifflin Company, 1992).

³⁰ I recognize that there is a debate about whether Lao Tzu was an historical figure.

³¹ Alfred North Whitehead, *Process and Reality (Corrected Edition)*, ed. David Ray Griffin and Donald W. Sherburne (New York: The Free Press, 1978).

frame a coherent, logical necessary system of general ideas in terms of which every element of our experience can be interpreted."³²

Whitehead felt that no philosophy, including his own, would ever complete this endeavor. Yet, Whitehead contributed much on which to build and may prove to be as foundational to the future of philosophy as Plato and Aristotle have been in classical Western thought.

If, as Adams writes, "according to the presuppositions of modern science, there are no normative laws, values, inherent structures of meaning, ends or teleological causality in nature—only existential and factual structures and elemental and antecedent causes that engage them,"³³ and this has been the central problem for modern philosophy, the humanities in general and in human-Earth relations, then Whitehead offers a way out. Whitehead offers a way to give us back our common sense notions about the world, our moral consciousness, and our feelings of affection, beauty, wonder and intimacy in a way that both encompasses contemporary science and redirects it.

I cannot describe Whitehead's metaphysics here other than to say it is a philosophy of organism. I understand that "philosophy of organism" was Whitehead's own preferred name for his philosophy. (The term "process philosophy" was given by others who followed him.) I will offer this brief explanation Whitehead's metaphysics from the brochure of the International Process Network:

The central claim of Whitehead's 'process-relational philosophy of organism' is that the world is not made up of independent material objects. In contrast to Cartesian philosophy, in which the world is thought to be made up of 'static substances,' dependent only on themselves for their existence, Whitehead's philosophy depicts the dynamic inter-relatedness of the multitudes of entities which compose the world. In this way of thinking, each entity requires others in order to exist, and each is

thoroughly engaged in creative life-processes of becoming.

Indigenous Traditions and Meaning

I have written about finding the basis of a meaningful universe in one's own experience, in post-modern science and in process metaphysics, and now I turn to indigenous traditions. I do this because indigenous traditions are characteristically cosmologically grounded.³⁴

One understanding of indigenous traditions is that nature has a language and we can communicate with nature. The tree speaks, the bird speaks, the wind speaks, the river speaks, the cloud, the sky and the sun speak. They are also our brother, sister, mother, grandmother, father and grandfather. There is one spirit common to all. Humans are part of nature. We can no more go out into nature than we can go out into our bodies. We do not "make" laws, we discover them. Our well-being depends on maintaining harmonious order in obedience to the laws that govern all of nature, including the human part of it. The role of law, as expressed by the shaman, is to mediate between "sky and earth." In this pair, "sky" is heaven, which is to say it is the order of the universe, and "earth" is our daily affairs among humans and all of creation.

This indigenous wisdom makes sense, not when it supports superstition or other negative aspects, but when we bring to the intuitive understanding of those who developed the indigenous traditions our own phenomenological experience, the wisdom of post-modern science, and post-modern process metaphysics.

If we do this, we will have established a cosmological basis for law. Instead of thinking about a human constitutional basis for law, we may again authentically find the ground of law in the order of the universe. Then we will no longer be making laws based on our ideological preferences, we will be discovering laws to which we must conform our behavior if we are to have an ordered existence.

³² Whitehead, 3. This definition of speculative philosophy is also a definition of "metaphysics."

³³ E. Maynard Adams, "The Mission of Philosophy Today," *Metaphilosophy* 31 (2000): 353-54.

³⁴ For an introduction to Whitehead's philosophy, see Robert Mesle, *Process-Relational Philosophy; An Introduction to Alfred North Whitehead* (West Corshohaken, PA: Templeton Foundation Press, 2008).

³⁴ We should exercise caution in appropriating the wisdom of indigenous traditions. Our scientific understandings of the universe are different than the understandings of those who developed these traditions. We cannot hope to experience what indigenous people experienced in these traditions. What we can do is have our own knowledge and experience enriched by the intuitive wisdom of these traditions. We can also rediscover sources of knowing that have been lost to modern humans.

Ecology as a Functional Cosmology

I will close this paper with a discussion of how ecology is a functional cosmology. Our interpretations of our phenomenological experiences, post-modern science, post-modern metaphysics and indigenous traditions are very broad. Further, few will thoroughly explore and develop these sources of wisdom. While these will sustain the basis of the new post-modern civilization and will be studied in school, we need a practical guide for common usage. This is ecology, which is a functional cosmology.

The unique feature of Earth is life. This is sustained by the upper layers of the Earth's crust, the surface features of Earth and a narrow layer of atmosphere. I was told that if Earth was the size of a globe, this band that sustains life would not be as wide as the varnish on the globe. The primary purpose of law must be to maintain and promote this unique feature, that is to maintain and promote life in its fullness.

I think of ecology as the science of life. It is the one nonreductionistic approach to understanding life on Earth and how it is sustained by dynamic interrelationships. As noted above, Edward Goldsmith states ecology understands "[l]iving things [as] differentiated parts of the hierarchy of natural systems that make up the ecosphere, and the ecosphere has a critical structure which enables it to maintain its homeostasis in the face of environmental challenges and to provide each of its subsystems with an optimum environment."³⁵

He also states "Ecology Seeks to Establish the Laws of Nature,"³⁶ by which he means:

To study the structure and function of the ecosphere and its constituent natural systems is to seek out their pattern. The general features of this pattern are relatively non-plastic, which is another way of saying that they are subject to constraints—in this case, that particular set of constraints required to ensure that their behavior

will serve to maintain the stability of the ecosphere. It is these constraints that we must refer to as the laws of nature or Gaian laws."³⁷

In the post-modern practice of law, these patterns of order must be primary. Ecology is a functional cosmology on which to base law.³⁸

These patterns of order are not fixed, rather they are dynamic. Edward Goldsmith writes:

The laws of nature are not absolute laws as were those that Laplace and La Mettrie saw as applying to the mechanistic world that they depicted. Gaian laws can be violated, but only at a cost—that of reducing stability, both directly at a specific level of organization and indirectly at other levels in the Gaian hierarchy including that of the biosphere itself.

Adherence to a specific set of laws is required to maintain the order and hence the stability of a natural system; if these laws are disregarded the degradation and eventual demise of the system will follow. As we move from one level of organization to the next, up the hierarchy of the biosphere, so do new sets of laws—usually referred to as "emergent laws"—become operative.

So the task of a cosmologically grounded law would be to discover and operate within this dynamically patterned order. I believe in classical Chinese understanding this would be the patterning of the heavens—*tianli* (the order of the universe, cosmology), and the patterning of earth's topography—*dili* (the order of Earth, geology and ecology). These orders are apprehended by *xin* (the human heart-and-mind).

Of the four essential characteristics of Earth Jurisprudence, cosmological grounding is the most important. Having discussed this topic, I will end this paper here and take up the other three essential characteristics in future writings.

³⁵ Goldsmith, 16.

³⁶ This is the title of Chapter 2 of Goldsmith.

³⁷ *Ibid.*, 12

³⁸ Yet, as we are seeing today, while scientists may come to agreements about constraints in the biosphere, such as they have on global warming, people may not accept their agreements and will resist taking the actions needed to conform to the Gaian laws. Thus, while ecology is "functional" because it relates to things that are verifiable and subject to reasoned, evidenced-based discussion, factors beyond the evidence and reason will still cause resistance. Overcoming this resistance requires an educational process where people are awakened to a meaningful cosmos through appeals to experience (phenomenological awareness of our connection to nature), to post-modern science, to philosophical understandings that can bridge the gaps of ideology, religion and civilizations, and also to the wisdom of indigenous traditions. Further, appeals to experience, post-modern science, process metaphysics and indigenous traditions are needed to extend cosmological understandings to human affairs. Cosmology ultimately involves both how we understand the patterns of order in the universe and the place of the human in the universe.

Four Classics of Huang Di (The Yellow Emperor)

BY HUANG DI¹
TRANSLATION BY MING LEE



Book I: The Eternal Law Chapter One: On the Birth of Law

Out of Dao (Tao, 道) is born law, what is used to define “right and wrong,” and verified by gain and loss. (Therefore) those who have mastered Dao give birth to law and dare not to break, follow what is born and dare not to destruct. (Now that) they use the law to regulate themselves, certainly they will be accepted by all. Dao is formless, out of which everything comes. Life harms, the harm it does is called desire or insatiability. Life will act. Action harms. The harm action does is called ignorance of timing, since action should be well-timed. Action constitutes events. Events harm. The harm events do is called counter act, or imbalance, or ignorance of what can be used as resources. Events will be talked about. Discourse harms. The harm discourse does is called misname, or not knowing to fear others (for that they will know the truth sooner or later), or wrong expression of oneself, or talking big, or taking insufficiency as abundance.

So all come from that same formless origin, while some live some die, some lose some win. Wellness and woe follow the same law, but nobody knows its origin. The way to wisdom is to know what is and is not from that formless. No matter how small a form is, there will be a name for it. With form and name, there will be contrast like black and white. So those who know the Dao encounter the world indifferently, rootlessly, effortlessly, selflessly.

So whatever happens in this world, it will have a form and be discoursed. With form and within discourse, the rightness can never be escaped, and the trace never covered. The impartial see the clear picture, and at their best they change the public. The most upright are calm, and the calmest are sages. The selfless are wise, and the wisest embody the model for the world. They can judge according to the law of

Heaven² (Tien, 天), their wisdom can be tested by the events. This is like straightening the timbers, no matter the quantity. Once you have the tools and measures ready, no one can escape. So people say, with measures ready, it is easy to rule the country. Breakdown and continue, lose and regain—who knows the reason? Death and rebirth, take woe as well, who knows the extremity? Reflect on the formless, and you know where wellness and woe come from. The method to cope with change stops at balance.³ The imbalance between the heavy and the light is called loss of Dao. There is eternal law of Heaven and of Earth, of public affairs, of class⁴, of holding ministers, and of the extremity of using the citizen. The eternal law of Heaven and Earth includes: season change, day and night, birth and death, softness and hardness. The eternal law of public affairs includes: man working on farms, and women working at home. The eternal law of class is: the upper class and the lower class do not mix. The eternal law of holding ministers: use them according to their capability and do not make them do what they can’t accomplish. The eternal law to use the citizen is to order them work for the public rather than certain individuals. When the eternal law is broken and the limit is overdone, Qi,⁵ the method of counter balancing, should be used. After Qi and Zheng (justo)⁶ are established, their names will be eternal. Despite of the size of an entity, it resides in itself. Whether it follows the Dao or against it, live or die, it has its own name. With its name, there is justo.

Only those who have mastered Dao, can be clear about Heaven up above, and know the difference between the methods to be a king and to be a minister in the middle, and be aware of the process of birth and death of everything down on Earth. Only they can be simplest and finest, thus being formless and the embodiment of justo for the world.

¹ The “Yellow Emperor,” Father of the Chinese people. In 1973, many silk books were discovered in Mawangdui Han Tomb (No.3). There are four of them before the Second version of Lao-tzu. They were originally titled *The Eternal Law*; *The Ten Masterpieces*; *Chen(g)*; and *The Origin of Dao*. Here is the first chapter of the first book.

² Please keep in mind the difference between Western concept of Heaven and Chinese concept of Tien. The later does not refer to the spiritual entities like angels, but to nature or cosmos.

³ It means the best method to cope with change is to keep balance.

⁴ It means the difference in social status of people.

⁵ Qi as used in the Four Classics of Yellow Emperor (or Four Canons of Yellow Emperor) does not refer to spirit/pneuma, but the states of abnormality and the method to restore the natural balance.

⁶ Zheng (justo) as used in this context refers to natural balance, not justice in the jurisprudential sense, though in the Huang Di classics natural balance and justice would not be unrelated.

Quintessence*

BY TOM JABLONSKI

Shakespeare's play *Hamlet* tells the story of a son's struggle with a request from the ghost of his father to avenge his death by killing his murderer. The disgruntled spirit reveals that the murderer is Hamlet's Uncle Claudius who has since married Hamlet's mother Gertrude and assumed the role of the King. When the gravity of the request sinks in, Hamlet finds himself contemplating suicide and asks, "To be or not to be: that is the question . . .?"¹ The issue Hamlet faces is rooted in the wise advice given earlier in the play by Polonius to his son, "This above all: to thine own self be true."²

As Hamlet struggles with understanding who he is to be, he exclaims, "What a piece of work is a man! how noble in reason! . . . in apprehension how like a god! the beauty of the world! the paragon of animals!"³ In this oratory, Hamlet points out the downfall of many of us, the mistaken belief that humanity is the pinnacle of creation. Hamlet catches himself and asks another question, "And yet, to me, what is this quintessence of dust?" In this moment, he seems to realize that he is the same stuff of the rest of the cosmos, simple stardust. As the story unfolds, Hamlet forgets this awareness and returns once more to a pursuit of vengeance passed on to him from the dysfunctional ghost of his father. By the end of the play, all of the major characters are dead. Their quest for control via dominance, greed, lust, or revenge results in the typical ending of any game of hierarchical pursuit.

Dealing with the drama of the death of a father at the hands of an uncle is not something many of us face, but conjured spirits visit us regularly with their temptations. Mary Oliver speaks of these temptations in her poem "The Journey" where she writes, "the voices around you kept shouting their bad advice. . . . 'Mend my life' each voice cried."⁴ When we fall into the trap of living our lives to satisfy someone else, we in essence commit our own spiritual suicide by

veering from our truth. The voices of distraction creep in many times, often so subtle that we may not be sure we really hear them, or cannot tell from where they come, or perhaps prefer to deny that they exist. Beginning to understand who we are requires acknowledgement of the source of the voices. Then we can mend our own lives.

As a child, I used to spend time in a small patch of woods behind the house where I grew up. Those woods were a place where I felt connected; the sound of the poplar leaves vibrating with the wind, the sound of a great horned owl hooting through the trees, or a chickadee calling out in a soft "chick-a-dee-dee-dee" call—these were the voices of clarity. Somewhere along the way, I stopped walking into those woods and began a quest for an easy fix to the troubles in my life. I took many wrong paths, but I learned that there is more to life than simply taking the easy way. Eventually the woods from my childhood were cut down, paved over, and a shopping complex was built in their place. When I go back to my hometown, it seems that a piece of me was paved over along with the other creatures that inhabited that patch of woods. This is the piece that I need to reclaim if I want to achieve my own sense of being.

Later in life I found myself in a career as an environmental engineer, a job that was essentially about cleaning up the messes of humanity. The patch of pavement that was my old neighborhood was a small precursor of the devastation that continues to occur throughout the larger world. This devastation includes the likes of global warming, extinction of species, contamination of ground and surface waters, pollution of the air, and urban sprawl. Our lifestyle and its side effects create endless "opportunities" for environmental engineers. Like the Rolling Stones song, my work was a place where "I [couldn't] get no satisfaction,"⁵ for no matter how hard I tried, there was always more seemingly meaning-

¹ William Shakespeare, *The Tragedy of Hamlet, Prince of Denmark*, ed. Jeremy Hylton, (Boston: MIT Univ., n.d.), Act 3, Scene 1; available at <http://shakespeare.mit.edu/hamlet/full.html> (accessed May 18, 2008).

² Shakespeare, Act 1, Scene 3.

³ Shakespeare, Act 2, Scene 2.

⁴ Mary Oliver, "The Journey", *New and Selected Poems*, (Boston: Beacon Press, 1992) 114-115.

⁵ Mick Jagger and Keith Richards, The Rolling Stones, "(I can't get no) Satisfaction," *Out of Our Heads*, ABKCO, 1965.

less work to be done. Looking at the world as an endless source of resources and a bottomless sink for dumping our wastes resulted in my calling being warped into one that was mostly about enabling our communities to continue their habit of using the natural world as one more fix for the lack of meaning in our lives.

The dysfunctional spirituality that pervades the world distracted the engineers who paved over my old sanctuary in the woods. This voice continues to tell us that humanity is indeed the pinnacle of creation. Thomas Berry points out the roots of this view that include: belief in “a transcendent, personal, monotheistic creative deity”; belief that “the natural world is material, we are spiritual”; a focus on “redemption” which tells us “we are not for this world”; and the idea that “with technological invention, humans are able to surpass the natural limits.”⁶ These beliefs allow us to separate ourselves from the rest of creation, and continue the quest for what Berry calls “WonderWorld.” We can reach this place by finding the right prophet, product, pill, or practice. This obsession with finding the next fix digs us deeper and deeper into a world that is becoming more and more toxic and uninhabitable. Our competition to control the limited resources remaining places us at odds not only with the natural world, but also with our fellow human beings. Wars, terrorism, poverty, disease, addictions, and crime—these are the consequences that we face when we play our own games of hierarchical pursuit.

So what is the way out of “WonderWorld,” back to a place where we can coexist with all the creatures? Mary Oliver tells us “little by little, as you left their voices behind, the stars began to burn through the sheets of clouds, and there was new voice which you slowly recognized as your own.”⁷ Robert Greenleaf described such a cloud-burning experience he had while looking through the 100-inch mirror of a telescope at a great nebula in 1923. “What a sight! I shook with awe and wonder at the majesty of all creation. This primitive unstructured feeling, the powerful sense of

awe and wonder, is to me the source of religious feeling at its greatest depth.”⁸ Perhaps this cloud of cosmic dust, this birthplace of stars pointed Greenleaf towards his philosophy of servant leadership.



Greenleaf revisited that awe forty-three years later in the essay he wrote for the Alcoholics Anonymous publication *The Grapevine*. The intended audience of the essay was quite familiar with a lifestyle focused on fixes that kept them from finding themselves. Greenleaf’s essay addressed the universal question “Who am I?” as follows:

There is another “me”: a timeless, unchanging level of consciousness that is at one with the cosmos; a level at which all is one, where there is no uniqueness. It is that aspect of me that stands in awe and wonder before the mystery and the majesty of all creation⁹

Greenleaf understood the role that worldviews play in our lives. In his essay titled “The Institution as Servant” Greenleaf wrote, “Conscious religious concern is a part of the gear of civilization—a means to heal humanity’s alienation, which our ‘civilized’ state has brought about. The word religion, at its root, means ‘to rebind,’ to rebind humans to the cosmos.”¹⁰

⁶ Thomas Berry, *Evening Thoughts: Reflecting on Earth as Sacred Community*, ed. Mary Evelyn Tucker (San Francisco: Sierra Club Books, 2006), 25-28.

⁷ Oliver, 114.

⁸ Don M. Frick, *Robert K. Greenleaf: A Life of Servant Leadership* (San Francisco: Berrett-Koehler, 2004), 61.

⁹ Robert K. Greenleaf, “Choose the Nobler Belief,” *The Grapevine*, Oct. 1966.

¹⁰ Robert K. Greenleaf, *Servant Leadership: A Journey into the Nature of Legitimate Power and Greatness* (New York: Paulist Press, 2002), 93.

When I struggle with hearing my own voice, I have found that I can revisit the natural world to find that sense of oneness. One summer evening while I struggled with returning to work as an environmental engineer, I walked down to the park a few blocks from my house. I sat by a storm water pond on an overturned tree that had recently been felled by a beaver who took up residence in the pond. Looking out over the water, I was startled by a loud slap and then the beaver revealed itself as it swam in circles in front of me. Eventually the beaver moved on and I sat listening to the echoes from the slap of that engineer of the natural world. That voice reminded me that if I were to be true to myself, I would need to find a way to coexist with the natural world in the same way the beaver did. This might mean that work as an engineer could be a way to help humanity to

harmonize with the natural world. The challenge of how to do this remained, but there was a moment of connection as the insects buzzed, the ducks whistled, and darkness settled over the land; and then the first star of the evening revealed itself.

There is a revelation that occurs when I spend time in the natural world—that I too am stardust. Finding this awareness can be difficult, and once found it is easy to lose it behind one more patch of pavement. However, the time I spend in these natural places are times of healing. It is that healing that will be needed for me to continue to see the stars, to experience that awe that Greenleaf talked about. That awe allows awareness that the universal “quintessence of dust” that makes up the cosmos is our common bond—our authentic being.



Transformation, The Universe Story, and Love: What Works?

BY ALICE LOYD

The question on my mind when I found *Dream of the Earth* on a book giveaway table in 1997 was “How can people and our society recover the humanness that is our birth potential?” Thomas Berry’s writing applied that inquiry to its larger context more masterfully than I could have imagined doing. I underlined almost every word. At that time I was new to North Carolina, I’d never heard of the North Carolina Berrys or their noted philosopher-ecologist Thomas, and I was working alone on this issue and on the larger concern of ecological destruction.

At present, as Director of North Carolina Interfaith Power & Light, a program of the North Carolina Council of Churches, I work alongside hundreds of people engaged in these efforts across the state and have expressed my appreciation to Thomas in person. In my job I am confronted daily with the same question I dealt with then, however, a question that, judging by all reports, our movement has not answered, “How are humans to recover what Thomas refers to as our genetic coding in order to live peaceably within Earth’s society?” As I talk with Berry readers, I get the impression that what people need is to learn *The Universe Story*, the scientific narrative recounted in the book Thomas co-authored with Brian Swimme by that name. It’s an amazing story, and since I don’t recall not knowing it, I can’t say for certain that it would not have been transformative. I might have been turned from Earth-indifferent to Earth-connected by hearing *The Universe Story*, but I doubt it.

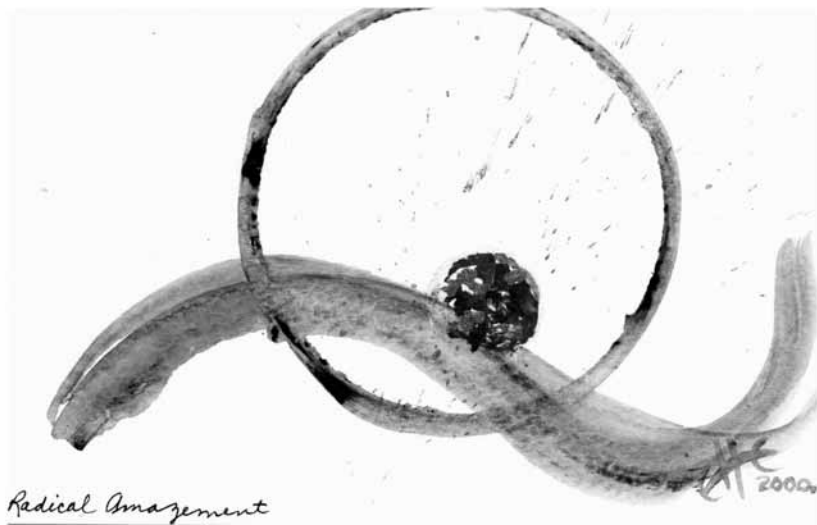
I’m not convinced that change comes through new information. As an educator willing to use any instrument that would help

avert the worst outcomes of human-caused climate change, I have not found a sure conversion technique. I share with most of the people who write for *The Ecozoic* the sense that the problem humanity must resolve lies underneath the problems we customarily address. I know, for example, that climate change is not the problem, but rather its symptom. And the immediate cause of the symptom—the industrial economy—is not the ultimate problem either, because even this economy could reduce its use of fossil fuels dramatically within a few years. Should it succeed in stabilizing the climate, though, it would create an equally large disaster within a short time, for the underlying cause would still be in play. Until we address the cause effectively, I think we can expect to create unjust economic systems with colossal environmental and social consequences.

I doubt that learning *The Universe Story* will correct the root cause of injustice because I don’t think the intellect is the vehicle that changes a worldview. I think a person’s view of origins reflects a person’s view of relationships, and that beliefs about relationship arise from relationship experiences rather than from statements about what relationships are or should be. In other words, I’m coming to view the role of the educator as that of convener rather than communicator. I’m coming to view the root cause of environmental destruction as a failure of relationship, or as every major religious prophet of the historical period has expressed it, as a lack of love.

The question all social justice activists are dealing with is, “How do we come to love Earth, ourselves and each other?” Here I’m expressing doubt that a story will effect that

transformation. More precisely, I'm questioning whether The Universe Story will speak tenderly enough to the hurt child inside the civilized adult human to heal its heart. For a wound of the heart is what I see as the root cause of the irrational, even suicidal choices now being made by humans in every nation on Earth. It's very hard to persuade people who are losing their love of life to step off their paths to preserve life for themselves or others. Our five-thousand-year history of hierarchic, life-hostile social structures has come



near destroying the zest for life that characterizes all wild things and would re-invigorate humanity now if it could be recovered.

Exploitative economic systems with their inordinate consumption patterns fill people with anxiety and grief wherever they are in the socio-economic hierarchy. Blighted, unwholesome relationships are the cause of climate change. I propose that the educational approach must be through the heart and not the intellect because I think that to revive this culture's liveliness and capacity for relationship, both human-to-human and human-to-non-human, requires more than information.

The Hebrew prophets saw love as foundational, and the fact that we call their teachings on love "commandments" shows how little we know of love, for love cannot be commanded. The prophets were calling attention

to love as the healer; they were giving counsel rather than commands. Because love is the magic that connects us with each other and with all things in a wholesome, voluntarily-encountered spell, they recommended that we exchange our isolation for belonging. The Universe Story tells us we belong here—I acknowledge that this is its meaning. But does it facilitate the removal of our defensiveness? I don't think it does.

I suspect that broken relationships must be mended body to body, and that only wild nature can alleviate the fears of the civilized adult. I think that if fifty adults were told the Berry-Swimme Universe Story and fifty others were guided into a non-exploitative experience with a free wild being in a safe setting, the latter group, having experienced a face-to-face relationship, would be more moved toward loving than the ones hearing the story. Nature's approach is utterly non-hostile to life, even allowing for the killing and devouring seen in the food chain and the destruction that comes with weather or seismic events. To experience nature's equanimity and egalitarian generosity is the essential balm, and I'm coming to believe that this experiencing must be first-hand and concrete.

I realize that contact with nature occurs each day in every life in some way without the healing effect, but I think this is because humans are not in a listening mode. The contact won't become a healing until it becomes a dialogue. As Thomas says in *The Great Work*, nature must be met on nature's terms. If industrialized humans are to enter into this world view, we need signals that bypass the culture-shaped intellect.

It may be true, in fact, that all humans require such a vehicle of re-entry into wildness and that the puberty-related initiation rites of Earth-based cultures assist the achievement. One educator who may have found suitable words and procedures for our current situation is Michael J. Cohen, who in *Reconnecting with Nature*¹ offers exercises in the stylized language he has developed to name what hinders and what helps to re-seat

¹ Michael J. Cohen, *Reconnecting with Nature*, 2d ed. (Lakeville, MN: Ecopress, 1997).

humans in nature's pattern. But he warns, "Remember, nature's intelligence has no stories. It is illiterate. It thinks by trusting and combining the innate intelligences. . . ."²

It makes sense to me that de-humanized, de-wilded Cenozoic humans require ritual in order to enter into that trustful relationship. African teacher Sobonfu Somé writes, "The ritual requires us to speak through our heart; the logic of the mind is an obstacle to its success."³ Ritualized encounters in which a human experiences the sentience of another species engage faculties more primitive and less socially adapted than the mind. Smell, touch, hearing and vision are more ancient and more adapted to this learning. They are more directly linked to the heart.

Without ritual to establish non-exploitative relating, in fact, it is hard for people today to relate well to each other, and the relationship with the whole of nature is even more demanding. I do think, however, that story is closely related to ritual, and I am therefore tentative in questioning the use of The Universe Story as the instrument of change. Perhaps what we need is ritual that reveals our story of origins.

I can state confidently that in my educational efforts, the people who respond most helpfully to information about climate change

are the ones who have a relationship with nature, usually formed in childhood. With people who hear the same facts but don't move into helpful action, I think I observe a detachment from nature, expressed usually by their mention of what matters more to them—family, career, income, or a social justice project more habitually engrossing. These people would be moved by the cries of a bluebird caught in a fence, though, because through that bird, nature would acquire a voice. I'm looking for a way to bring into their reality what I know as real because it became real for me a long time ago. I see a bird caught in every fence, just as a mother in the grocery store, missing her child, hears it crying down every aisle.

We will have to stop climate change by working with people as they now exist, and as they will exist during the coming days of calamity. But if we get past this crisis, we will need a more compassionate human through whom to build a more secure and fair society. More than we need to know our evolutionary past, I think we need to experience nature's daily guidance. I think our task at this moment consists of two simultaneous efforts: achieve the necessary carbon emissions reductions, and persuade others and ourselves to let nature open our hearts

² Ibid., 30.

³ Danielle and Olivier Föllmi, eds., *Origins: African Wisdom for Every Day* (New York: Harry N. Abrams, Inc., Publishers, 2005), reading for February 11.

An Evolving Cosmology: A Swamp Yankee Journeys to the Center

BY FRED LANPHEAR

My cosmology, or story of the universe and my place in it, has been evolving as has the universe. Although I didn't even know what the word meant as I was growing up, I did have a worldview and a story about the way life is, which had assumptions that informed my relationships and my life decisions. My changing story has been greatly influenced by the societal worldviews of my circle of relationships at specific times on my journey, as well by my life experiences.

I will describe how my cosmology has evolved through four phases of my life, following the Hindu tradition of designating life phases, and I have added a fifth to capture how I perceive consciousness to continue after the physical death of the body. In each of the four phases, I describe the nature of my life situation and my perception or understanding of the universe, including how I define my spiritual views and life purpose along with the scope and nature of my relationships.

Phase I. (0–21 yrs.)

I was born into a family of Swamp Yankees¹ in a seacoast summer resort in southern Rhode Island nine generations after my early ancestors walked off the boat in 1669. Of French Huguenot roots, my ancestral lineage has been deeply entrenched in Seventh Day or American Baptist traditions since arriving in America. I grew up in a post-depression working class family. My backyard for the first six years of life was a salt-water marsh, but I was in walking distance of beautiful beaches at the edge of the Atlantic Ocean. I moved five miles to the family farmstead when I was six where I lived for the next 15 years while receiving my elementary, secondary and undergraduate education.

My world experience took place within the regional geography of the Northeast, particularly the New England states. However, through my education, I knew that there were other continents across the spacious ocean. World War II made this realization quite clear to me since my older brother was in the army in Europe. I also knew there were planets and stars galore in the spacious sky that became visible as our special star, the sun, became obscure as planet Earth rotates so that the sun is hidden on its opposite side. My scope of the galaxies was the visible canopy of the nighttime sky characterized by the Milky Way.

The American Baptist Church I attended, along with my family and peers, was instrumental in shaping my spiritual understanding and place in the universe. During this phase of life, my early childhood image was of a two-story universe with a heaven and earth along with a supernatural creator God. This shifted later in the initial phase of life to embrace a spiritual dimension of my earthly existence with the notion of God as a divine force involved in the creation and ongoing activities of the world. At the center of my spiritual understanding (faith) was a focus on the life and teachings of Jesus as a way of knowing the nature of God. I strongly identified with Jesus as a model to emulate and found a sense of purpose in striving to live my life according to my understanding of the values and practices ascribed to him in the scriptures.

Native Americans have ways of honoring all species, not just the two-legged humans, by being present to all living creatures as well as the inanimate world. They refer to these as "all my relations" If you had asked me at this time in my life who was included in "all my

¹ Swamp Yankee is a colloquialism that refers to long-term residents (Northeasterners with colonial ancestry) from southern Rhode Island, nearby eastern Connecticut and southeastern Massachusetts. Their attributes include being countrified, stubborn, independent, with little formal education and no desire to augment it. A bias I grew up with that has been associated with the Swamp Yankee is resentment of the wealthy that came from out of state and purchased prime local property to build summer homes.

relations" it would have been a rather limited "short list" and with a rank of importance that began with the family at the center with concentric rings of human groupings based on geography, religious and ethnic connections, and even economic and political biases. I was living a rather insular life in the initial phase of my life.

Phase II. (22–35 yrs.)

At the completion of my undergraduate education at the University of Rhode Island, I moved to State College, Pennsylvania, where I began a five-year graduate program at Penn State and the next leap in my journey of consciousness. Living in a college town was quite different. I was continually being confronted with new challenges to some of my traditional worldviews and religious assumptions and practices. I encountered foreign students at church, as fellow graduate students, and as apartment residents with whom I shared a bathroom. I immersed myself in my studies and research. I received my Ph.D. in Horticultural Science and became an assistant professor at Purdue University in West Lafayette, Indiana. For another nine years, I was immersed in science and academics and rose through the ranks to full professorship at the end of my eighth year.

I was steeped in the scientific paradigm with confidence that research and technology would ultimately provide answers and solutions to the most perplexing problems facing humanity. While my focus at Purdue was primarily research, I found I was equally drawn to teaching. Academia was both challenging and fulfilling. This was also a time in my life for raising a family. We had three children and built our first home in the suburbs. My spatial world did not radically expand in this phase of my life except through my intellectual pursuits. In fact, my research focus tended to reduce my scope or worldview to a more reduced, cellular and even molecular perspective.

In State College, I connected to a Baptist Church that provided a connection and continuation of Phase I. I married my life partner, Nancy, at the completion of my Masters degree, who joined me and brought both familiarity and complexities to my life. When

we moved to West Lafayette to begin my academic career, we immediately connected to a local church that merged Baptist and Disciples congregations. This was during the '60s, a challenging time for the United States and the church. There was growing social unrest around civil rights and the Viet Nam war. I became involved in a movement that was challenging the churches to become present and compassionate to the innocent suffering in the world. It was a trying time for the church as its traditional theology was being called into question by secular forces of science and the human potential movement. My life's work in this phase was to teach, research and advance landscape horticulture. My spiritual path was still shaped by Christianity with a major focus on social activism and church renewal.

"All my relations" did not expand greatly during this phase of my life. It was different from the community I grew up with, primarily Anglo-Saxon with a few individuals of color, ethnic and religious background that exposed the narrowness of my cultural setting. We strongly identified with the civil rights movement and took every opportunity to support it and identify with it.

Phase III. (36–56 yrs.)

I experienced a vocational-crisis when I was 36. My life took a radical shift from academia to social activism. It was following the turmoil of the '60's that I experienced a "call" to engage in changing the world. The extent to which I changed the world is debatable, but there is no question about the change that occurred in me during this time in my life.

My family was invited to join the staff of the Order Ecumenical, a secular-religious order with a mission of teaching the new theology of the 20th Century and renewing the church to care for the world. We left the comforts of academia and suburbia to live communally in some challenging living conditions around the world. Our children came with us reluctantly. It was a time of deepening our existential understanding of our faith and a radical engagement with the church and social structures of society. Both of us continued to be employed while being fully

My 70 Year Mandala

Fred Lamphear - December 22, 2005



A visual depiction of my life journey showing my community of reference in the inner circle of icons and the primary focus of my life in each five-year period in the outer ring. The first decade of my life, as shown in the lower inner circle as a solid circle, representing my primary focus on discovering my individual identity, moving clockwise to the 7th decade, where the phylogenetic tree of life is my community of reference.

involved in the mission of the Order Ecumenical. It was a time of intensification and expansion of the scope of our care for the world as we spent over 10 years of our lives in Kenya and India.

My spiritual perspective was greatly expanded, particularly when we were in India. The symbols and cultural patterns of Hinduism permeated the fabric of India, It was entwined in every space and routine of daily living. Buddhism was likewise a strong presence in this part of the world and reached out to attract and impact Westerners as they dared to explore its teachings and practices. Not only were we getting clear on the existential grounding of Christianity, we were integrating or transposing Christian theology into various cultural contexts. We were also embracing pluralism as foundational to our emerging religious perspective. My life's work and spiritual path in this phase were aligned with the mission of the Order Ecumenical.

"All my relations" expanded to include all people in the global village that was now my home. I was immersed in and embraced diversity, in fact I found myself celebrating the cultures of the world. That which had once seemed weird was now part of my daily life. Humankind had become my extended family, either through story or actual connections.

Phase IV. (57-→72 yrs.)

Although residential communities of the Order Ecumenical dissolved in 1988, some of us continued to stay intertwined with the residual structures for a few more years. Nancy and I decided that the communal living style of the Order was important to us and after leaving India, where we had been for six years, we chose to join the Residential Learning Center (RLC) in Bothell, Washington that was one of the few remaining communal locations of the Order. A year after we arrived, the staff decided to dissolve the RLC and re-envisioned the nature of our community as a multi-generational cohousing community, named Songaia.

The Order, like other movements in history and an element of evolution, had come into being in response to a crisis, formed itself into a rather effective, cooperative entity, and then transisted or dissolved into a diversity of decentralized activities and enterprises. My life patterns and theological perspective had been radically shaped by the experience of the Order. Now, without the corporate vision and mission of the Order, I was free to forge my identity and worldview independently, though not without the influence of Order memory and the ongoing thinking/action of global colleagues.

This current phase has been a time of encountering new worldviews in the workplace, in events and conferences, and in readings I have been blessed by being immersed for 10 years in an alternative worldview as Chief Executive Officer of a professional graduate school of acupuncture and oriental medicine. My rational, scientific background was challenged by the art and practice of a medicine that did not fit the Western model. I observed and experienced the effectiveness of

appropriately placed needles in overcoming medical issues for which Western medicine is ineffective. Overcoming skepticism and resistance by scientists and medical practitioners who were unwilling to consider this 3000 year-old medicine to have scientific validity, I worked diligently to bring this form of medicine into the mainstream. I employed Western science to apply rigorous experimental protocol to establish the validity of this “exotic” medicine. Gradually, the doors are being opened to the benefits of this form of complementary medicine.

The book that had the greatest impact on laying the foundation for my evolving worldview in this phase of my life was *The Dream of the Earth* by Thomas Berry.² It was a paradigm shift for me, from an anthropocentric to a biocentric way of viewing the world. I discovered that the context of human development that had been the focus of my life was too small. An equally mind-expanding book was *The Universe Story* by Brian Swimme and Thomas Berry.³ A sequence of other books that I discovered rather synchronistically, have contributed to the framework, substance and choice of language and metaphors to describe my current cosmology. They include:

- *The Phenomenon of Man* by Pierre Teilhard de Chardin⁴
- *The Planetary Mind* by Arne A. Wyller⁵
- *The Spark of Life: Darwin and the Primeval Soup* by Christopher Will and Jeffrey Bada⁶
- *A Walk Through Time* by Sidney Liebes, Elisabet Sahtouris and Brian Swimme⁷
- *Radical Nature* by Christian deQuincy⁸
- *Evolutions Arrow* by John Stewart⁹
- *The View from the Center of the Universe: Discovering Our Extraordinary Place in the Cosmos* by Joel R. Pimack and Nancy Ellen Abrams¹⁰
- *Cosmology and Creation* by Paul Brockelman¹¹

The events that shaped my worldview are too many to enumerate, but the nature of

these will help inform the source and type of their influence. The Institute of Noetic Sciences (IONS) was an organization that was profoundly important as I strove to integrate science and spirituality. It also provided alternative perspectives on spirituality than that provided by the institutional church and other religions. The Center for Ecozoic Studies (CES) provided an opportunity to delve into the implications of Thomas Berry’s writings and to express my own emerging perspective. Connection with Michael Dowd and Connie Barlow’s traveling ministry to tell the great story (see www.thegreatstory.org) has enriched my understanding of the universe story and the evolutionary journey we are on. Participation in an EarthSpirit Rising Conference and a post-conference Council of Earth Elders in 2005 introduced me to my current Earth Elder path.

It has been a time of integrating life experiences, worldviews, and emerging perspectives into my current cosmology. I have been opened to new spiritual practices, from East and West. It was also a time for letting go of old patterns, such as of switching to organic gardening. I skeptically confronted my reliance on the reductionistic form of my science experience and became less doctrinal about science, recognizing that it had some of the same arrogance and rigidity that has plagued religion throughout the ages.

Each of us, as part of the latest evolutionary innovation of human consciousness, is beckoned to reflect on our beginnings, our endings, and that which gives meaning to the journey. The God-like qualities that are within each of us, beckons us to be conscious co-creators of the evolving universe. Being present to the planetary crisis, the next evolutionary leap requires an innovation in collective consciousness that propels us into new levels of cooperation to draw upon the wisdom of nature, to design and operate in concert with the natural world.

We are the universe becoming conscious of itself. As reflective beings, we are aware that we are on a spiritual journey. We are exploring a multitude of pathways to understand and celebrate that which gives meaning to our unique role in the evolutionary journey.

² Thomas Berry, *The Dream of the Earth* (San Francisco, CA: Sierra Club Books, 1988).

³ Brian Swimme and Thomas Berry, *The Universe Story: From the Primordial Flaring Forth to the Ecozoic Era* (San Francisco: HarperSanFrancisco, 1992).

⁴ Teilhard de Chardin, *The Phenomenon of Man*, trans. Bernard Wall (New York: Harper and Row, 1965). A new translation of this work is available. Teilhard de Chardin, *The Human Phenomenon* (Portland, OR: Sussex Academic Press, 1999), a new edition and translation of *Le Phénomène Humain* by Sarah Appleton-Weber.

⁵ Arne A. Wyller, *The Planetary Mind* (San Francisco, CA: MacAdam/Cage Publishing, 1996).

⁶ Christopher Will and Jeffrey Bada, *The Spark of Life: Darwin and the Primeval Soup* (New York: Perseus Publishing, 2000).

⁷ Sidney Liebes, Elisabet Sahtouris, Brian Swimme, *A Walk Through Time: From Stardust to Us—The Evolution of Life on Earth* (Hoboken, NJ: John Wiley & Sons, 1998)

⁸ Christian deQuincy, *Radical Nature* (Montpelier, VT: Invisible Cities Press, 2002)

⁹ Evolutions Arrow by John Stewart, *Evolution’s Arrow: The Direction of Evolution and the Future of Humanity* (Denver, CO: Chapman Press, 2000)

¹⁰ Joel R. Pimack and Nancy Ellen Abrams, *The View from the Center of the Universe: Discovering Our Extraordinary Place in the Cosmos* (New York: Penguin Group, 2007)

¹¹ Paul Brockelman, *Cosmology and Creation: The Spiritual Significance of Contemporary Cosmology* (New York: Oxford University Press, 1999)

Many gaps in the understanding of our beginnings as well as the natural processes of our evolutionary journey have been revealed through the contributions of science and the unfolding universe story. This new story can be the overarching, common story that unites us as a species, that relates and connects us to all that is. Each of us, from our individual and/or collective faith perspective, has the opportunity of integrating and revising our faith statements, which we stand before and commit to, based on this new cosmology.

In regards to my spiritual views and practices during this phase. I initially distanced myself from the institutional church for about 12 years while immersing myself in books about religion, such as *The Battle for God*¹² and *The Great Transformation*¹³ by Karen Armstrong, *Beyond Belief*¹⁴ by Elaine Pagels, *The Heart of Christianity*¹⁵ by Marcus Borg, and *Encountering God*¹⁶ by Diana Eck. It has become clear to me that the church and society is going through a transformation similar to the Axial Age described by Karen Armstrong in *The Great Transformation*. It was with this context that my wife and I joined a progressive United Church of Christ congregation two years ago. It was a church that we experienced as being on the edge of redefining a relevant new role for Christianity. We have decided that we want to be involved in this transformation and ongoing description of the evolving God. I believe the historic church continues to be a relevant laboratory in which this can take place.

Laying the contextual foundation for “greening” the congregation, I have led two discussion courses on Elders as Earthkeepers. I have introduced *The Dream of the Earth* and the universe story to the congregation from the open pulpit. I believe that our congregation, as well as others, are or will soon be receptive to exploring a new role for religion in the post-modern world as Ken Wilber projects in one of his recent books *Integral Spirituality: A Startling New Role for Religion in the Modern and Postmodern World*.¹⁷ This transformation in religion is an aspect of the evolutionary journey and unfolding universe story. It is one element of my current life’s purpose that can be best

described as caring for Earth as an Earth Elder (see www.earthelders.org) while participating in the second great transformation.

“All my relations” has evolved to recognizing my kinship and intimate relationship with all the creatures of Earth, current and pre-historic. The great challenge is internalizing this relationship, where it becomes experienced from the heart and not just my intellect. Creating and using story, songs and rituals that celebrate our connections with the natural world is a major effort of Earth Elders and my own journey towards embodying this new relationship to all that is.

Phase V (75+ or—to infinity)

Although I do not believe in a literal heaven or hell, I find myself anticipating a disembodied extension of consciousness when my physical body, including my brain, dies. It is not a denial of my mortality or even a longing to continue to exist in some spiritual form that informs this notion. Instead, it is being present to the accumulated psychic evidence from near-death experiences (NDE), past-life phenomenon, and instrumental transcommunication (ITC), or recordings of allegedly discarnate spirit. The research on these phenomena has shifted from claims from parlor séances to rigorously conducted research projects in university settings.¹⁸ For now, we can either accept or reject anecdotal evidence.

For most of my life, I have considered this a topic of interest, but not one that has been a focus of concern. Perhaps it was related to a denial of my impending mortality, or at least within a time frame that was worth dwelling on. However, having been diagnosed with ALS and now facing my death within the next 3–5 years, it becomes a topic that is more germane. The whole notion of consciousness and how it manifests itself in living and non-living matter, is a topic of extreme importance. Unraveling the mystery of consciousness will contribute to our understanding of whether the notion of a planetary layer of thinking substance or consciousness (Noosphere), as proposed by Teilhard de Chardin in *The Phenomenon of Man*, has validity.

¹² Karen Armstrong, *The Battle for God* (New York: Alfred A. Knopf, 2000).

¹³ Karen Armstrong, *The Great Transformation: The Beginning of Our Religious Traditions* (New York: Knopf Publishing Group, 2007).

¹⁴ Elaine Pagels, *Beyond Belief: The Secret Gospel of Thomas* (New York: Random House, 2004).

¹⁵ Marcus Borg, *The Heart of Christianity: Rediscovering a Life of Faith* (San Francisco: HarperSanFrancisco, 2004).

¹⁶ Diana L. Eck, *Encountering God: A Spiritual Journey from Bozeman to Banaras* (Boston, MA: Beacon Press, 2003)

¹⁷ Ken Wilber, *Integral Spirituality: A Startling New Role for Religion in the Modern and Postmodern World* (Boston, MA: Integral Books, 2006).

¹⁸ “Death: Window to the Infinite,” *Shift: At the Frontiers of Consciousness*, Issue 17, December 2007–February 2008.

Practical Mysticism: Contemplation, Creativity, and the Ecozoic Age

BY ANGELA MANNO

“They’re destroying the Earth!” I cried. This lament welled up from the depths of my being nearly thirty years ago, during hypnosis, when I first began to explore my spirituality. Upon the discovery of this deep and hidden despair, I began to sob uncontrollably. Such love, such passion, such *empathy* had I unearthed from within me!

As an artist, I am a practical mystic. When something is experienced as deeply and powerfully as this, I am compelled to live it out, to express it both through my life as well as through my art. And as an artist, my work is to be engaged in the creative process. Desire, imagination, mental focus and skill in the use of my medium are all tools of my profession. Equally important is a well-developed tolerance for the discrepancy between what one envisions and one’s position at any given point in the creative process.

My life since that first revelation of great love and sorrow is the story of my journey into the Ecological Age. Many gifts were given to me during that time almost three decades ago: I was reintroduced to the work of Teilhard de Chardin and for the first time read about the Gaia Hypothesis. Over several consecutive years, I participated in frequent sweat lodge ceremonies at the Sundance on the Southern Ute reservation and underwent a number of transforming experiences—desert vision quests and an initiation into the shamanic traditions of Peru. These were the formative, chthonic experiences that nourished my continued growth into Ecozoic consciousness.

My artwork during this period (from 1984 to 1992) reflected these revelations about the living Earth, its beauty and fragility and humanity’s ability and obligation to take responsibility for the condition of the planet.¹ A subsequent

series entitled “All My Relations” reflected both my experiences of the Native American sensibility of all things being related to each other in a spatial mode, as well as my understanding of things being related within a time developmental cosmos. Later, after in depth studies in the Universe Story at Genesis Farm and years apprenticing with a master of Byzantine Russian iconography, I created “The Earthly Paradise: Icon of the Third Millennium,” to express the sacred nature of the Earth using the liturgical methods and materials I used in creating traditional icons.

Perhaps one of the most important gifts of the mid-eighties was learning to apply the principles of the creative process to daily life and to teach that skill to others. With this new skill and knowledge, my “canvas,” so to speak, became as wide as the world itself.²

As I continued to hone these skills, I eventually would articulate a “Great Work vision.” This Great Work vision expressed what most deeply mattered to me, it offered a powerful, uncompromising vision I came to *regardless of whether or not I thought it was possible*. This concept—not limiting what you want by what you think is possible and truly being in touch with what is highest in deepest in you—is key in powerful creating. Equally important in the creative process is holding that vision, once you have identified it as a *fait accompli*.

And so I asked myself, if anything were possible, what would I want to see? I did not hesitate: “The Earth is restored to her pristine beauty and full regenerative capacities.” Since an important part of this process is to have in your mind an image or a kinesthetic sense of when you would know that vision had become a reality, I pictured people bathing and drinking out of the Hudson River.

¹ “Conscious Evolution: The World at One”, a 13-piece mixed media series, traveled internationally for four years before being collected in its entirety in 2000 by the Smithsonian Institution’s National Air and Space Museum for its permanent fine art collection.

² For the invaluable knowledge, training and insights discussed here, I am indebted to Robert Fritz, creator of the system known then as DMA, Now Technologies for Creating™. I became a certified teacher of the DMA basic course in 1983.



All My Relations from Conscious Evolution Series by Angela Manno

³ I was delighted to learn nearly 30 years after I'd formulated this vision that the policy statement of Friends Committee on National Legislation, a Quaker lobbying group in Washington, DC includes: "We seek an Earth Restored."

⁴ Hawken, Paul, *Blessed Unrest* (New York: Viking Pres, 2007)

⁵ Mountaintop mining in Virginia and glacier drilling and destruction in Chile are two of the latest and most heinous that come to mind.

⁶ In *The Dream of the Earth*, Thomas Berry encourages the cultivation of "the highest state of tension that the organism can bear creatively." Thomas Berry, *The Dream of the Earth* (San Francisco: Sierra Club Books, 1988), 219.

⁷ Herman Greene "What Is Process Thought?" unpublished paper available from the Center for Ecozoic Studies, ecozoic@mind-spring.com.

Almost three decades later, I still hold that vision as a reality (and just learned, incidentally, that an organization has been formed to make the East River of Manhattan fit to swim in). Millions upon millions of people now share in this vision of "an Earth restored."³ In that time, I have watched ordinary people's consciousness, concern and actions intensify and proliferate across the globe on behalf of the Earth. It is now estimated that there are well over a million organizations worldwide working to restore ecological balance and social justice.⁴

At the same time, we have witnessed the disappearance of more and more species, increasingly devastating technologies for extracting the Earth's resources⁵ and the mounting impacts of global warming. This is actually a critical point in the creative process: when things seem the most distant from your vision, that is the time to recommit and strengthen your vision. It is exactly now that one must continue to hold the vision of an Ecological Age, while at the same time remaining in touch with current reality. This generates the all-important creative tension that Thomas Berry speaks about in his writings.⁶

Since those grace-filled years of the 1980's, I have come to realize that the New Story of the universe is the cosmological framework, the explanation for why those creative techniques I had been teaching and applying to my daily life were effective: The universe itself is one ongoing creative enterprise, and humans are endowed with a special ability to participate consciously in the unfolding of creation.

With this missing cosmological piece, the picture was almost complete. I say almost, because although my image of the universe was one of wonder, fecundity and beauty, I did not quite feel an integral sense of belonging to that picture. There was an inexplicable sense of distance between me and this grand and beautiful cosmic story, a sense of separation that I had tried in many ways to heal. This is despite a unitive experience I had in 1994, when I was engaged in conversation with a fellow student of the Earth Literacy certificate program at Genesis Farm. As we spoke, I had a stunning and overwhelming feeling of oneness, that I and this other person were nothing but the universe in conversation with itself.

In Herman Greene's essay *What is Process Thought?*,⁷ he states "Each individual in the universe is unique, ultimately significant and of intrinsic value, and the health of the universe and every society rests on the health of the individual." I believe this to be true, and as such it is crucial that we strive to heal a very deep wound within the Western psyche, an aspect of one of the "afflictions" in Buddhism—that of aversion. Buddhist psychologist Tara Brach identifies this wound as "self-aversion," also known as shame in other psychological circles.

How can we embrace this new revelation of Immanence, of "seamlessness" to use Brian Swimme's terminology, when so many individuals suffer from such profound alienation? I believe this intra-psychic rift—some would call it a war—is the inward aspect and source of that "deep, hidden rage" Thomas Berry talks about that Western civilization bears towards the conditions upon which life has been granted us. We are averse to life itself, as long as suffering and imperfection are part of

life. If we are the universe in its self-reflexive mode and carry this split, this enmity within us, how can we feel at one with all there is, and by extension care for and nurture it (love our neighbor as oneself)?

My own journey of healing this wound took on renewed urgency in 2003, when I began to experience what I can only describe as a dark night of the soul. This period was marked by a pervasive feeling of emptiness and lack of energy for the old ways of living.⁸ I quickly realized, fortunately, that I needed to establish deeper roots—in a community and in a spirituality that spoke to my condition. My search soon led me to the Religious Society of Friends (Quakers), where some of my needs for belonging and a context within which to heal and grow began to be fulfilled. I also discovered among the Quakers a promising and exciting milieu in which to continue to advance the vision and realization of an Ecozoic Era.

Quakers, too, are practical mystics. With a belief in continuing revelation, each age, each day and each moment presents a fresh opportunity for listening. As such, their basic view of the human/divine relationship is very compatible with the insights of a creative universe in the New Cosmic Story. They practice a “listening spirituality” and strive to embody the Light that is given them. The gifts of each individual are then encouraged through what is called the “stewardship of gifts.”⁹

Among Quakers, I have found myself deeply listened to and nurtured, and over time, I have been able to contribute back to the whole. Last winter, for example, at the prompting of fellow members of Friends in Unity with Nature,¹⁰ I developed and taught an 8-week course at Friends Seminary in Manhattan to young people and adults entitled *Eco-spirituality & Action*, which I based on the outline of my book in progress *Planetary Perspectives*. This course quickly led to New York State Quakers writing a declaration of “Peace with the Earth,” an elegant, further explication of the long-standing Quaker Peace Testimony.¹¹ As a result, 91 gatherings throughout the State and parts of New Jersey and Connecticut are currently considering what their response will be to the plight of the Earth.

This listening spirituality is the antidote to what Thomas Berry calls the autism of our time. “What is needed on our part,” writes Thomas, “is the capacity for listening to what the earth is telling us.”¹² The contemplative aspect of Quakerism has now sensitized many Friends to the suffering of Earth. Through this deep listening, Quakers have begun to “rediscover fire,” a love that in early Friends was poured out onto the human community.

Today, that love is being extended to the whole of the natural world. It has given rise to movements within Quakerism to simplify lifestyle, to create a permanent department on environmental concerns within the Quaker lobbying group Friends Committee on National Legislation (FCNL), and to embrace the Earth within their long-standing testimonies for simplicity, peace, integrity, community and equality. Meeting houses are greening themselves, and more and more Friends are embracing eating locally and examining every aspect of their lives and how it impacts the Earth. These changes are recognized as a spiritual necessity and are part of that upwelling of individuals and groups all over the planet that are forming networks like synapses in the brain, like an immune system awakening. Friends are now considering what can be done outside the faith community to make an impact.¹³

I have no doubt that this trend will continue and intensify in the years to come, that the “Earthcare” movement within Quakerism will take on a life of its own. And this, to me, is the most encouraging thing of all, because when Quakers get behind an issue, they themselves become a force of nature (think abolition, women’s suffrage and civil rights).

A parallel course for me now is the path of what some Buddhist psychologists are calling radical acceptance—compassionate attention to the disowned parts of oneself and all that is. As I acknowledge this little piece of Earth—me—I realize that along with cherishing and preserving the Earth, my most urgent task is to mend my life, to embrace the disowned parts of myself. Though it seems like a contradiction, striving to be free from anxiety about imperfection while striving to bring forth the Ecological Age are both essential. I

⁸ May, Gerald, MD, *The Dark Night of the Soul: A Psychologist Explores the Connection Between Darkness and Spiritual Growth*, (San Francisco: Harper San Francisco, 2005), 136.

⁹ For a wonderful discussion of the Quaker notion of the Stewardship of Gifts and other basic tenets of Quakerism, see Lloyd Lee Wilson, *Essays on a Quaker Vision of Gospel Order* (Philadelphia, PA: Quaker Press of FGC, 2002).

¹⁰ Friends in Unity with Nature (known internationally as Quaker Earthcare Witness) is one of many committees Quakers have formed to address specific concerns. Two of the best known are FCNL (Friends Committee on National Legislation) and AFSC (the American Friends Service Committee).

¹¹ The full Peace with Earth declaration of New York Yearly Meeting is available at <http://www.nyym.org/nurture/ewg/peacewith-earth.html>; Internet; accessed May 18, 2008.

¹² Thomas Berry, *Dream of the Earth*, xiv.

¹³ Marshall Massey led a ground-breaking workshop for Quakers and non-Quakers entitled “Earth In The Headlines: How are we called to respond?” in March, 2008 at Powell House, a Quaker retreat and conference center in upstate New York.

feel this practice is key in mending relationships at all levels: the intrapersonal, interpersonal and human-Earth. If we hold that we are the conscious phase of the Earth, then self-care and Earth-care are one and the same. This is not a narcissistic pursuit; it's restoration of the individual upon which the health of society and that of the universe rests. Thus the centerpiece of my daily practice today is a compassion practice.

On a more outward level, I continue to search for ways to "let my life speak" (a favorite Quaker expression), to embody in the fullest way possible my most cherished values and vision. Living off the grid, animal husbandry, organizing and lobbying, advocating renewable energy, opposing nuclear power, and developing teaching materials to empower others to realize their role in the emerging Ecological Age are all things I am pursuing now. My artwork is undergoing a deep transformation, having much to do with the suffering in the world—both personal and planetary—and the ultimate form it takes remains to be seen. My consolation during this transition is that I regard all aspects of my life as my "art," not just my formal works.

As we strive to embody the Ecological Age, Thomas reminds us that we need "a type of discipline that we call the four virtues: justice,

prudence, temperance, and fortitude. A person has to have judgment, a person has to have discipline, restraint, a person has to have the power of courageous action in times of difficulty and endurance."¹⁴ We may well recognize this time period as a dark night experience for the entire Earth Community. If we are able to bear this planetary "night" with restraint, with faith, with courage and with great love for all beings, the gift of this painful and devastating impasse will surely emerge.¹⁵ As I continue on this path, I feel my best hope in cultivating these virtues, so essential for Ecological humankind, is within the context of a wise and loving community that holds these virtues in high esteem.

As an artist and activist, I will continue to hold and work for the vision of the Earth restored to her pristine beauty and full regenerative capacities, or in other, more eloquent words: "a luxuriant earth community, mutually-enhancing in all its layers and levels of life and being, where the minds of the universe are safeguarded and nurtured; where the creativity of each nation of every species is energized for the total vibrancy and joy of the whole community of beings."¹⁶

¹⁴ Thomas Berry, "Every being Has Rights," ed. Hildegarde Hannum, Twenty-Third Annual E. F. Schumacher Lecture, 2003; available at http://www.smallisbeautiful.org/publications/berry_03.html; Internet; accessed May 18, 2008.

¹⁵ "... impasse becomes the place for the reconstitution of the intuitive self. . . While nothing seems to be moving forward, one is, in fact on a homeward exile." Fitzgerald, Constance "Impasse and Dark Night," *Women's Spirituality: Resources for Christian Development*, ed. Joann Wolski Conn (New York: Paulist Press, 1986), 289.

¹⁶ Thomas Berry, *Dream of the Earth*

An Acoustic Theology of Ecology: Animals, Jazz, Cosmology and Sustainability

BY JAY B. MCDANIEL

The world needs people who delight in novelty. There are at least two places in human life where this comes naturally: animals and jazz.

Animals are our closest biological and spiritual kin, and yet they delight us in their differences. In these differences they reveal forms of intelligence and creativity that are not reducible to our own projections but that have beauty in their own right. We come to realize that animals are not people in the sense of being human, but that they are indeed persons, because they are subjects of their own lives, each with a unique voice.

Jazz reveals a variety of voices in which life can be expressed. If we listen to it carefully we hear humanly created voices of one sort or another, some vocal and some instrumental. But we also hear the voices of the more-than-human world: the clapping of thunder, the singing of birds, the murmur of wind, the chanting of insects. The sounds of jazz, like the voices of animals, remind us that we lie within, not outside of, a larger world of the Ten Thousand Things.¹ Or perhaps better, the Ten Thousand Sounds. Chinese scholars tell us that in Chinese thought the building blocks of the universe are not static things but rather dynamic happenings or events.

The human task today is for us to learn within the larger realm of the Ten Thousand Sounds, adding our voice to the mix in ways that are creatively integrated with the rest of creation. The creative side of this integration requires us to train our ears to listen for differences as well as similarities and to enjoy the novelty. Spending time with animals and listening to jazz can be spiritual disciplines of a sort. We might call them eco-disciplines.

If we are theistic in orientation, we might also speak of them as practices through which we find God and God finds us. Of course it can seem odd to add a word like “God” to the mix. For theists the word is inviting, but for others the word too often suggests a monarch in heaven who is cut off from the world by the boundaries of divine transcendence and who somehow discourages a respect for creation.

As a panentheist in the process or Whiteheadian tradition, I understand God differently. I understand God as an indwelling Lure toward beauty within the whole of the universe and within each creature and also as a Deep Listening who hears all the voices in the universe. This lure toward beauty is found within humans and other animals as an indwelling urge to live with satisfaction—with harmony and intensity—relative to the situation at hand. And the Deep Listening is an encompassing compassion which feels the feelings of all living beings with a tender care, sharing in their joys and sufferings. The Listening is the receptive side and the Lure is the active side. We might call them the Yin and Yang of the universe.

**The great Tao covers everything like a flood.
It flows to the left and to the right.
The ten thousand things depend upon it
and it denies none of them.
It accomplishes its task yet claims no reward.
It clothes and feeds the ten thousand things
yet it does not attempt to control them.
Therefore, it may be called “the little.”**

**The ten thousand things return to it,
even though it does not control them.
Therefore, it may be called “the great.”**

**So it is that the True Person does not wish to be great
and therefore becomes truly great.¹**

*To view the author’s art, go to www.angelamanno.com

¹ Verse 24, *Tao Te Ching*, available at www.the-bigview.com/tao-te-ching/chapter34.html : Internet, accessed May 16, 2008.

Whitehead proposes that the universe as a whole lives and moves and has its being within the larger context of this Lure and Listening, the Yin and the Yang. Christians might call it God's call and God's empathy.

If God is understood this way, then an appreciation of animals and jazz can be a way that humans find God and also a way that humans appreciate the diversity of the Ten Thousand Sounds. These two movements—one toward the vertical sacred and one toward the horizontal—go together. We find the world in God and God in the world. In the remainder of this essay I offer some reflections on how this might work out in human life. I begin with a further meditation on listening and its potential role in theology.

The Need for Acoustic Theology

In the beginning is the listening. Before we are born, when we lie inside our mother's wombs, we cannot see anything because our eyes are closed. But we hear our mother's voice and know the voice as part of who we are. In this knowing there is an intimacy of felt connection. The listener is the listening and the listening is the listened to.

Later in life, once we are born, the same situation occurs when we listen to live music. We can close our eyes and listen to the sounds coming from outside us. And yet the sounds are inside us, too. We know that we are different from the music and yet the music is inside us as part of who we are, at least in that moment. Here the voices are not simply those of our mother. They are the voices of the world. Through music we see the truth of what Whitehead's saying in *Modes of Thought*: "We are in the world and the world is in us."²

Of course the same situation applies when we listen to the tones of other people's voices and to the sounds of nature. As we visit with a friend who is suffering, we see the friend with our eyes and listen to what she says. There is a separation of knower and known. But the tone of her voice affects us at a more intimate level, revealing her mood. If we close our eyes just for a moment and simply listen, her mood is within us. Visually she has disappeared from sight. But psychologically she is still inside us.

Given the sense of connection that auditory experience so often brings, it is strange that so much Western theology has neglected it. Of course there have been theologies of music and attention to the spoken word, especially in preaching. And in Islam there are profound traditions which highlight Quranic recitation as a means by which God can be directly experienced in human life.

Nevertheless in so much Western theology the emphasis has been on visual experience and even more specifically on the visual experience of reading and responding to texts. This emphasis on visual experience has also been prominent in Western theories of knowledge. We equate knowing the world with having insight and with having a view of the world: that is, a worldview.

This puts eco-theology in a strange position. On the one hand it wants to help people recover a sense of felt connection with worlds of hills and rivers, plants and animals. It wants to help us come to our senses. But on the other hand it inherits where knowing is reduced to visual knowing and to metaphors that come from sight. Thus eco-theologians typically speak of ecological world-views but not so much of world-sounds or world-touches or world-feelings.

The visual metaphors can indeed provide a sense of felt connection with the world. Images can play a profound role in moral and spiritual training. We can learn a lot about the world and about the divine reality attention to light and colors. But somehow an emphasis on vision must be balanced and enriched by attention to other ways of knowing, including the knowing that comes from listening. The philosophy of Whitehead is especially helpful in this regard in at least three ways.

First, with his notion of experience in the mode of causal efficacy, he offers a way of understanding how sounds embody a transfer of feeling from vocalist to listener. He suggests that when we hear the song of the bird, for example, we are hearing sound-feeling. We are being causally influenced not only by the objective behavior of the bird, but also by the feelings of the bird. The world of sound is an expression of energy and energy is feeling.

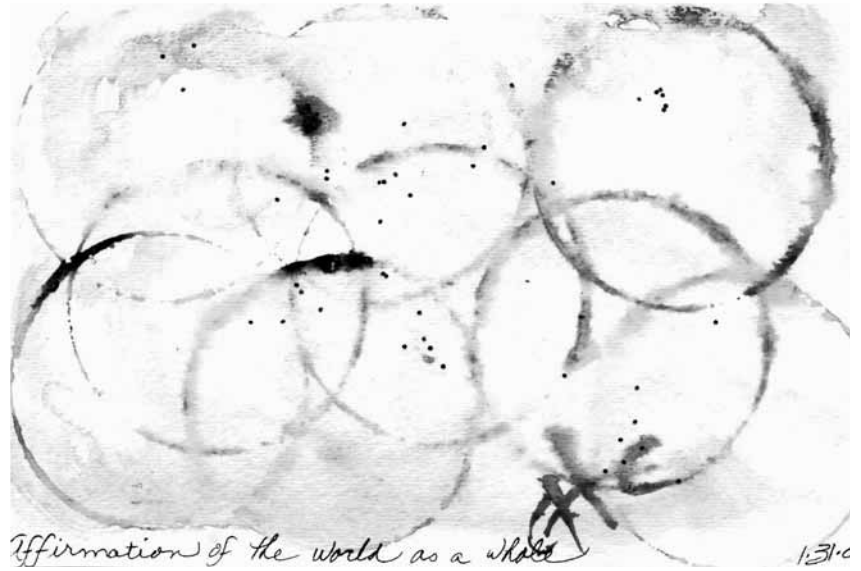
² Alfred North Whitehead, *Modes of Thought* (1938; repr. New York, The Free Press, 1969), 165.

Second, with his notion that ideas are not reducible to their linguistic expressions, he opens the door for appreciating how people and other living beings can have forms of wisdom that are valuable in their own right and that are not reducible to “texts” and “discourse.” From Whitehead’s perspective, plants and animals can know things without having (or needing) human language to express it. So can human beings. We can know what is happening in our own bodies, for example, and our understanding need not be mediated by verbal or written language.

Third, with his unique way of understanding God, Whitehead offers a way of understanding how humans and other animals might experience God in non-verbal yet powerful ways and, equally important, how God might experience humans and other animals in such ways. These non-verbal ways can include touch, taste, smell, and movement, imagination, and hearing.

Hearing plays a special role in the Western biblical traditions, insofar as the presence of God is so often described as a calling from God. Thus God can be heard but not seen, sometimes as a still small voice within the human heart. Whitehead’s perspective makes strong contact with what we might call the auditory stream of Western thinking. For example, Whitehead’s God can easily be described as a Deep Listener who listens to the world moment by moment, calling it into forms of beauty relevant to the situation at hand. The “primordial nature of God” listens to possibilities and the “consequent nature of God” listens to what is happening in the world. The very life of God is an ongoing activity of coordinating these two realities for the sake of the universe.

God is not external to the world in the way, for example, that one body might be external to another. God surrounds or encircles the universe, which means that the unfolding universe is inside God, much in the way that an embryo might be inside a womb. God is the Womb of the universe. Moreover, in Whitehead’s philosophy, this Womb cannot be understood on the analogy of subjects and predicates. In human life we often separate subjects and predicates as if the subjects were



one thing and the predicates (their activities) quite another. But Whitehead proposes that the true subjects of our world—living cells, individual animals, individual people, God—are not separable from their activities. Thus the Womb is the act of listening. In the beginning is the Listening.

All of this suggests that a rather unique form of “acoustic eco-theology” might be developed with help from Whitehead. In the following paragraphs I will sound this out in a more practical way. I want to introduce Whitehead’s way of thinking further with help from music and more specifically from jazz. And I want show how jazz can be a source for those of us who seek a more sustainable future.

Jazz as Sound and Idea

By jazz I mean the kind of music you would hear when you listen to *Kind of Blue*, the album by Miles Davis sextet. Its songs feature vast streams of improvisational melody played by Miles Davis (trumpet), John Coltrane (saxophone), Cannonball Adderley (saxophone), Bill Evans (piano) and Wynton Kelly (piano) and Jimmy Cobb (drums). The songs are exemplary of the kind of sound that is typical of contemporary jazz: various melodies played simultaneously, complex percussions, and dissonant notes. My wife tells me that there are two kinds of people in the world: those who love this kind of music and those who tolerate it.

I am in the first category. In my more extravagant moments I think that everybody in the world should listen to jazz fifteen minutes a day as a kind of spiritual discipline. It would help train our ears to hear the many voices of the world in an open-minded way without reducing them to our own. My wife, however, is in the second category. She teasingly says that whenever she hears an improvisational jazz solo it makes her want to slap somebody. "It goes on and on forever without ever achieving resolution." I tell her that she should avoid jazz concerts and that it is all right just to think about the idea of jazz.

By jazz, then, I mean two things. I mean the sounds of jazz as enjoyed by some people in the world, and I mean the idea of jazz as it can be reflected upon, even by people who do not like to listen to it. For those who enjoy the sounds, the sounds are like the waters of the Ganges for a Hindu. You can be immersed in them again and again, and feel cleaned out and more alive every time. For others, though, the waters are far too cold to enjoy. My point is that even the others can learn from the idea of jazz.

Consider, for example, the idea of performing jazz. It is a lot like the idea of a sustainable community. It is the idea of people getting together, each with a different voice, sharing in one another's feelings, and seeing if they can work together to help create something beautiful. They take delight in their different voices; they agree to "hang in there" together even when things may seem to fall apart; and they forgive one another their mistakes. They have respect for the past but are willing to improvise and add new ideas, because they are sensitive to the call of each moment. They trust in the availability of fresh possibilities.

Advocates of Whitehead's philosophy believe that the world would be a better place if we all imagined ourselves inside this concert. Of course we might not call it a concert. If we are Christians, Jews, or

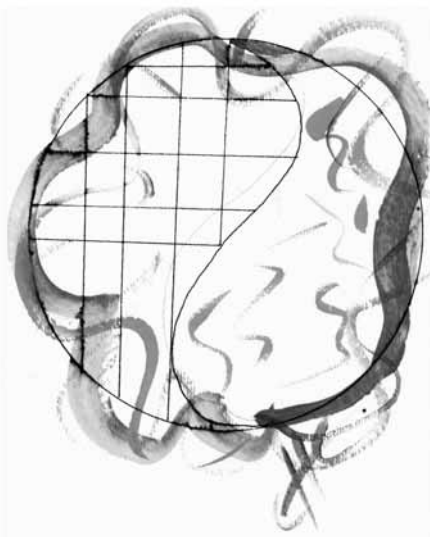
Muslims we might call it "the continuing creation." If we are evolutionary biologists we might call it "the evolving whole." If we live in China we might call it the "continuous creativity of Ten Thousand Things." In any case we would see the hills, rivers, animals and trees as adding their unique voices to a larger whole. We would know that our lives are our instruments and the decisions we make, moment by moment, are the notes that we play. We would recognize that our calling in life is not to isolate ourselves from the wider world but to add beauty to the whole, each in our own ways. And we would realize that, if we are to respond to this calling, we must be flexible and adaptive, grateful for the past but not stuck in it.

Priesthood of all Listeners

What, then, might it be like to live in this flexible and adaptive way? Process theologians, influenced by Whitehead's philosophy, have many ways of describing it. Many if not most process theologians identify themselves as Christian; but some are Jewish, Muslim, Buddhist, Hindu, Daoist, and Confucian. And some are spiritually-interested but not religiously-affiliated. Let me describe a way from a Christian perspective.

Imagine that you are a Christian and that you go to Mary's Piano Bar in Philadelphia on a Saturday night. A pianist, bass player, and drummer are playing a jazz standard, each improvising during a solo. Mary is the pianist. You are absorbed in their music and also mesmerized by the way they interact with each other. Often they close their eyes but still seem to feel one another's presence. They hear the notes being played, but also feel the feelings of one another. In feeling one another's moods they are living examples of what process theologians call "experience in the mode of causal efficacy." They are individuals, to be sure, but they are also composed of one another. They are a community.

It occurs to you that you would like to live this way, too. Sometimes you lean too heavily in the direction of Western individualism. You equate individualism with self-enclosure, forgetting that you yourself feel most alive when you are connected with others. You would



Right-Brain

like to be composed to the feelings of others and to respond to them in creative yet sympathetic ways. You are reminded of Paul's idea in the Bible that an authentic gathering of Christians is a society of spiritual friends in which people share in one another's joys and sufferings. You come to see Mary's jazz ensemble as a vivid example of what Paul means by "church" and wonder if the spirit of the music isn't their way of experiencing the living Christ.

As you watch them, you also wonder what the musicians are like as individuals. You know that they bring with them years of training in music and, for that matter, years of life experience. You can see it in their eyes. But somehow, even as they bring the past with them, they live in the present, where the music is. You would like to live in the present, too. Often you find yourself clinging to the past even though it has passed away, or clinging to the future even though it has not yet arrived. Your friends tell you that you are sometimes distracted and unable to listen to them, because you are too often preoccupied with other matters. You want to become a better listener. You want to be more open to the sacrament of the present moment.

You worry, though, that if you truly became more open to the present moment, you might lose something important. You do not want to neglect your responsibilities for the past or your responsibilities to the future. The jazz concert reminds you that this present moment is never isolated. It includes the past as remembered and the future as anticipated. How else could the musicians remember the jazz standards? How else could they build upon what was played a minute earlier?

Equally important, how else could they anticipate what to play next? The future is in the moment as a possibility even as it is more than the moment. You are intrigued by the way they anticipate the future in their improvisational solos. They are making it up as they go. They are open to fresh possibilities. You ask Mary how she knows what notes to play. She puts it very simply: "I trust in the Music."

As she says this, it dawns on you that trusting in Music is a lot like trusting in God. Music can be inside you and outside you at

the same time. You cannot grasp it as an object in space but you can feel its presence and be nourished by it. It can inspire you with its comforting melodies but also challenge you to widen your horizons. You can move with it and dance in its presence but you cannot own it as your possession, because it belongs to other people, too. You begin to wonder if Music wouldn't be a better name for God than "God."

The Bible offers you support. You know that the Gospel of John speaks of God as a Word that became flesh in Jesus. You know that the word "Word" is an English translation of the word Logos and that some people think it is not a very good one. You have been told that Logos means something like the creative spirit of the divine reality at work in the world. Maybe the Logos is not a sentence uttered in a human language, much less a sentence written in a book. Maybe it is more like live Music. We might call it the Song of the Universe. And maybe we can hear this Song as it is sounds in the voices of others and as it speaks to us in the still small voice of our hearts, but maybe we can also add to it with our own actions. Maybe we are part of the Music even as it is also more than us.

This gives us new eyes for music itself. For many people in the world it functions as a sacrament. Christians speak of being immersed in the waters of baptism once in their lives. The customers in Mary's Piano Bar are immersed in the waters of live jazz. Jazz is their baptism or, perhaps better, their Eucharist. They experience the real presence of the divine reality through the real presence of rhythm, melody, and harmony. The musicians are their priests, but the customers are also priests to the musicians, because the experience depends on all of them.

Mary puts it this way: "When we are really playing well, our playing is inspired by everyone in the bar. My fingers move to the Music but they are moved by the man sitting on the front row and the woman sitting to my right. I am listening to the other musicians, but I am also aware of their listening, and their listening inspires my playing." Mary believes in the priesthood of all listeners.

Whitehead's Cosmology

The way of living described above—a way of listening and responding—is grounded in the philosophy of Whitehead. My illustration shows how it might be appropriated by a Christian; but the way can well be described in other religious terms. At this point it may be helpful to give readers a sense of its general tone, which relies on Whitehead's cosmology.

Put simply, Whitehead pictures the whole of reality on the analogy of an improvisational jazz concert. He imagines the universe as an ongoing act of creative improvisation and he proposes that each actual entity in the universe is a moment in the flow. This means that reality is akin to live music. It is not solid and unchanging like a rock. It is instead flowing like a river.

For Whitehead even rocks are flowing at the microscopic levels. The molecules and atoms that compose rocks are dances of energy never quite the same at any two instants. Thus Whitehead speaks in ways that resemble Buddhism with its doctrine of impermanence. Whenever we look deeply into something, we do not find something solid and unchanging. We find flow.

Of course the flow of the universe is patterned flow. Whitehead was a philosopher of science and he knew that all entities—atoms and molecules, hills and rivers, people and stars—behave in law-like ways that can be understood scientifically. But he did not see the laws of nature as templates imposed on the universe from afar. Instead he saw them as habits of behavior that emerged within nature in the remote past and that now have a power of their own.

The laws of nature are like jazz standards; and every event in the universe plays one or another of these standards. The most general standards are played by all entities and they have no choice in the matter. But every event plays the standard in its own unique way adding its own voice. All apples may fall from trees but no two apples fall in exactly the same way. We live in a universe that is both structured and creative.

One of our most important tasks as human beings is to listen to the voices of others in an

open-minded way and respond with loving-kindness. We see this kind of listening in the pianist as she listens to the voices of the drummer, the bass player, and the saxophonist. She can express her own voice, but she also takes delight in other voices. She enjoys the familiar melodies of the standards they play, but she also enjoys novelty and surprise. She does not hide from dissonant chords but also carries the hope that at least some of those dissonances can be resolved into wider harmonies. The need in our time is for people to learn to listen in this open-minded way. At least this is the kind of listening that is needed if we are to develop sustainable communities. I conclude, then, by offering a Whiteheadian approach to sustainability.

Sustainability

From a Whiteheadian perspective sustainable communities can be households, farms, neighborhoods, workplaces, classrooms, villages, cities, or nations. They are sustainable to the degree that they are creative, compassionate, equitable, participatory, respectful of diversity, ecologically wise, and spiritually satisfying, with no one left behind. In other words, they are sustainable in two senses. They can be sustained into the indefinite future given the limits of Earth to absorb pollution and supply resources. And they provide material and spiritual nourishment—sustenance—for human beings in community with one another and Earth. Spiritual nourishment occurs when people have roots and wings.

"Roots" is a metaphor for the security, stability, and balance that people experience when they belong to healthy communities and places. The communities can be families, villages, regions, ethnic groups, religions, or nations—or some combination. Most of us are rooted in several communities simultaneously. We can be rooted in the mutuality of family life, in the customs of our culture, in the workplace, in the ideals of our nation, and in the teachings of a religious tradition or spiritual practice. Even as we might be anchored in relations with people, we can also be anchored in places: that is, the natural and built landscapes of our environments. These can be the moun-

tains and rivers of a village where we live, or the parks and neighborhood stores of our urban neighborhood, or the comfort of our apartment with its seating arrangements and décor. When these communities and places are combined they form what people call home. Home is a place where a person lives; it is a community to which one belongs; and it is a place in the heart.³

“Wings” is a metaphor for adventure, creativity, exploration, and hope. Even as we might benefit from stable relations with others, we also need to enjoy a sense of novelty, a sense of hope, a sense that the future can be different from the past. Even healthy relations can grow stale if they do not have novelty. At a personal level the need for novelty is felt as an indwelling lure to grow intellectually, emotionally, and spiritually. There lies within each person an inner desire to become more wise and more compassionate, and thus more complete or whole as a human being. At a social level the need for novelty can take the form of working with others to help create healthier and more just communities: communities where people have adequate health care and sanitation, where the poor are no longer poor.

It is difficult to know which is more powerful in human life: the need for roots or wings. Certainly the need for adventure does not replace the need for home. Particularly in times of trial, people turn to what is familiar and predictable. But there is also a need for newness, for variety, for differences. Healthy relationships can grow stale if change does not occur. Humans need familiarity, but we also need surprise. We need order, but we need a little chaos, too.

One thing is clear, though. In modern times many people feel frustrated by two undesirable options, one of which offers wings without roots and the other of which offers roots without wings. The first option is a rootless consumerism in which the purpose of life is reduced to acquiring more and more material possessions and the prestige they offer. The second is wingless fundamentalism in which the purpose of life is reduced to repeating the customs and values of the past, at the expense of being open to new ideas and experiences.

The need for sustainability originates with the need to find a way past these two undesirable options: a way with roots and wings.

As humans find their way with roots and wings, it is important to remember that the other living beings, too, need and deserve the benefits of a sustainable future. We live in a world of Ten Thousand Sounds. This takes me back to where this essay started, with a word about animals. Not only does Earth need us to live within its own limits to absorb pollution and supply resources, but other animals need respect and kindly treatment as well. Indeed, they need for us to help enjoy the fruits of sustenance. From a Whiteheadian perspective, animals, too, have their relationship with the Listening and the Lure, with the Yin and Yang of the universe, with the Calling and Empathy of God. God is within each animal as a lure to live with satisfaction and God shares in, and is widened by, the beauty of animals’ lives and voices. God would be less “God” were it not for the animals.

In relation to wild animals, our task is to listen to their needs with help from science and aesthetics, and then to make sure that there is space for them to flourish in the habitats appropriate to their natures. This means the provision of wild spaces in rural and urban settings. In relation to animals upon whose lives we intervene in more direct ways—companion animals and farm animals, for example—this means kindly treatment and respect. It also means recognizing that they are means of grace in human life: that is, places where our own sense of companionship and beauty is widened to include what is more than human and thus more than us. Animals become a place where we discover transcendence: the transcendence of the universe and the transcendence of the divine Listening. In the beginning is this Listening, but in the end as well. And in the Listening the voices of animals have a prominent role. A sustainable future is one in which we hear those voices as part of a larger music in which we, too, participate. One way in which our ears can be trained for this hearing—but not the only way—is through fifteen minutes of Miles Davis every morning.

³ Of course not all homes are healthy. We can live in a village but not be at home in it. We can spend our waking hours in a workplace but feel alienated from the work we are doing. We can go home at night to our apartment but be in tension with the other members of our family. We can be born into a culture that is filled with violence and arrogance that seeps into our souls. We can be citizens of nations that have imperialistic ambitions on others. We can belong to religions that stifle creativity and try to dominate others. In short, we can be alienated. This alienation is itself a teaching. Like physical pain, it can tell us that that we are in the presence of something that is hazardous to our health and the health of the communities in which we live. Thus a distinction can be drawn between healthy homes in which we truly feel at home because they are hospitable and compassionate, and other kinds of homes which are inhospitable or even oppressive. A healthy home—whether it is a family or a culture or a nation—has two qualities. It is a home amid which there is some degree of mutuality, a sharing in a common destiny, such that its participants feel bonded in a community that makes the whole of their lives richer. And it is a home in which the wing side of life—the creative and free side of life—is encouraged and nourished. In such a home, the community is a context for creativity. The roots give rise to wings.

The Promise of More*

BY JOHN SURETTE, SJ

Billions of years before our own appearance in evolution it was already seeded with promise.

—Theologian, John Haught

No matter where we focus our attention in the 13.7 billion year unfolding of the universe, we find the promise of *more*. We find it in the beginning and we find it in our present moment.

In its original flaring forth, the universe expressed itself as a plasma of charged particles and energy. The temperature of the plasma was in the order of a thousand million degrees centigrade. That primordial furnace contained the promise of atoms. And so it happened, after less than a million years the plasma cooled as it expanded and the particles were drawn together forming atoms of hydrogen and then helium. Very quickly the universe took the form of galactic clouds of these gases. These proto-galaxies, hundreds of billions of them, foamed into existence.

The galaxies held the promise of stars. And so it happened, due to the attracting force of gravity, the molecules of hydrogen and helium were drawn together where they ignited, and the primal stars burst into being. These stars, hundreds of millions of them in each galaxy, lit up the universe like a cosmic Christmas tree.

One of these stars contained the promise of our Solar System. And so it happened, some five billion years ago, a primal star recently named "Tiamat" grew old, swelled, and exploded with the brilliance of a billion stars, scattering its dust in space. It was a supernova! Again the uniting force of gravity was at work. Over time that star dust was drawn together where it ignited and gave birth to our Sun. It was from the scraps of this birth that the planets, including our beautiful planet Earth, were born.

The early Earth contained the promise of life. And so it happened, some four billion years ago, conditions were such that life was able to emerge within Earth's ocean in the

form of tiny one-celled creatures. For millions of years they cleaned the waters, added oxygen to the atmosphere, and prepared the way for every differentiated and complex form of life that was to follow. Among those who followed were we humans, the most creative and unpredictable of creatures.

The promise of *more* was embedded in humankind. And so it happened, over the past 200,000 years, we humans moved from being hunter-gatherers into being village and city dwellers. We dared to dream dreams and see visions. We created language and art, literature and poetry, philosophy and theology, science and technology, and in modern times took into ourselves the very powers of the universe itself.

The evolving universe is essentially promise. Its Creative Energy carries this great promise of abundance, of fulfillment, of *more*. That *more* turns out to be galaxies, stars, planets, Earth, life and each one of us reading these words at this moment with all that moves deeply within us. Reflecting on this cosmic reality, David Toolan, SJ, wrote that the promise of *more* "shines through the whole of things, not just at the beginning but throughout all time and history and at every instant."

This *more* is often not predictable or even imaginable. A charged particle in the primordial plasma could not have foretold atoms of hydrogen and helium. Those atoms could not have imagined stars and galaxies. Tiamat could not have predicted our beautiful planet Earth, and Earth's early life forms could not have forecast the human adventure. In recent times who among us could have predicted the disintegration of the Soviet Union or the collapse of Apartheid in South Africa or the emergence within Maoist China of a capitalist economy.

The *more* the universe promises often turns out to be a total surprise. Such a universe points to an Ultimate Mystery that is more than we can imagine, a Divinity full of surprises and delights in change and adventure. Such a universe provides the cosmic basis for the hope of fulfillment that resides at the core of the great religions and in the hearts of all peoples. This hope invites us into our future and moves us into action in the present moment.

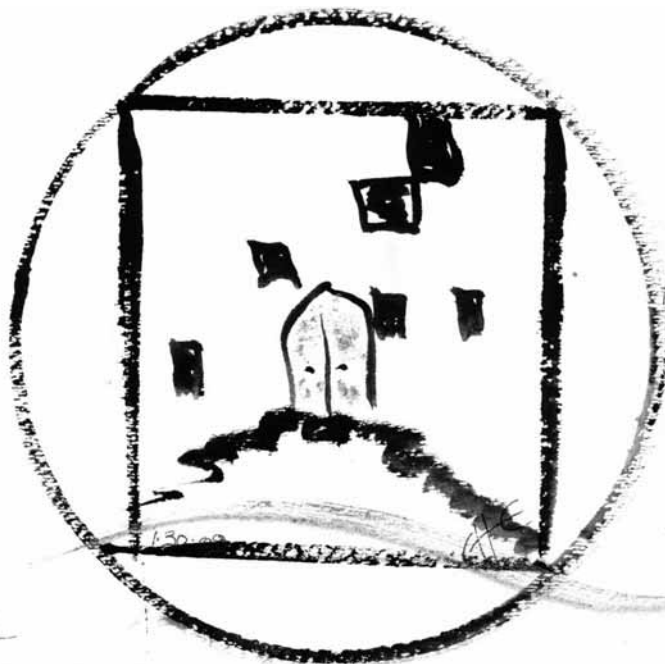
The promise of *more* also provides us with the basis for an ecological ethic. It nurtures within us humans an intensified sense of responsibility for Earth within which such promise is embedded. It fosters an ecological justice, a justice that is sensitive to all creatures that carry within themselves such a promise. It makes evident to us that to contribute to the diminishment of Earth and its human community is to despair of the promise and of the Maker of the promise.

Many look at our 21st century world with its ever-growing problems and they perceive an historical process leading to ever-greater chaos. Experiencing a lessening of their optimism for the future, they yearn for the good old days. Others look at the same radical changes are taking place in our world and they perceive the resulting chaos as being a necessary condition for the emergence of

something more that is promised. These people become our “cultural creatives” and they are the ones who will lead us into our promised future. These people experience the promise as a source of potential energy, an energy for moving forward and dealing creatively with the challenges and invitations of our time and for the enhancement of our human adventure.

As children of the universe, we know the dynamics of the cosmos play out in our individual human lives. If the promise of *more* is carried by the whole cosmos, we know the promise is available to us in our present moment. And so it does not surprise us we are never satisfied and carry deep within ourselves an endless aching need. Theologian Karl Rahner has said we live in a world in which “all symphonies must remain unfinished.”

Our hearts are restless and when we experience this restlessness we are participating in the promise of *more* that pulsates throughout the universe. The macro and the micro are involved in an “interbeing.” The universal is present in the particular and the particular participates in the universal. The cosmic yearning for *more* and our individual yearning for *more* are one yearning. An evolutionary universe encourages us to believe and to trust there is always *more*!



self-critical

Rethinking Houses as Living Systems for All Life

BY TIM WATSON

This is a vision for how human habitations can be seen as regenerative life sustaining systems for Earth.

In the United States buildings and homes use 70% of utility produced electricity and produce 38% of our carbon emissions. We stand on the threshold of shifting to carbon-free energies to heat, cool, and light our way to renewed habitats that enrich life for people, plants, and animals.

Global Context

There is a planetary shift of consciousness at hand. It has to do with how humans are recalling their connection to all life on Earth. This is not a new idea. Countless cultures of antiquity lived this wisdom. In this spirit of understanding the Western world finds itself rethinking how to design and build houses that integrate consideration of human well-being with the well-being of non-human life forms.

Concurrently, we are reawakening to honoring the needs of life forms that invariably populate the land around the houses we build.

Concepts of “green building”, or “sustainable use” practice are finally taking center stage in Western society. These ideas acknowledge the need for humans to live more lightly on the Earth. Evidence of the degradation of our biosphere finds humans awakening to risking not only our own survival, but the survival of a great proportion of other life forms struggling to co-exist with us. We are seeing the challenge of meeting the most basic human needs as having an enormous influence on the quality of life impacting all “those” who are to inherit the Earth.

The word “those” as it is being used here, infers an important distinction. It not only refers to human populations, it confers attention to all the myriad life forms that populate Earth’s biosphere.

Recent history of human intervention into the biosphere’s natural processes has led such visionaries as architect William McDonough

to reconsider how humans are affecting Earth’s natural systems when constructing buildings. Among many related topics, his thinking encompasses the concept of “embodied energy.” Assessment of a building’s embodied energy considers the life cycle of a material from the beginning of its use to its reuse. This way of analyzing “cradle to cradle” dynamics helps designers assess the environmental impact of their work. Significantly, McDonough champions “regenerative” concepts. As will be explained, this concept ranges beyond today’s mainstream sustainable use policy thinking, and is central to rethinking how we design houses.

How we build our homes, both in their design, use of materials, their relationship with surrounding biota, as well as our dwelling use patterns, will fundamentally determine the fate of our shared future with those who co-inhabit the Earth with us. Enhancement or regeneration of life forms a key to how we are rethinking these processes. Regenerative systems design goes beyond maintaining current balances with Earth’s life communities. Regenerative system thinking’s central focus is to enhance future probabilities of Earth’s natural systems. Related “seventh generation” concepts serve to enhance existing natural ecosystems ability to regain their former long-term balance within Earth’s grand design. These concepts contrast with sustainable use thinking, which tends to focus on maintenance of current natural resources as we find them today. If we consider the

ongoing diminution of natural ecosystems, sustainable use polices seem to fall short of helping previously compromised natural systems regain their former healthy equilibrium.

With great clarity, Buckminster Fuller acknowledged “We rape the Earth each time we build!” When such understanding is seriously entertained, we find ourselves taking a fresh look at how we can reconstitute and enhance the well-being of non-human life forms affected each time we build or reshape human habitat. Correspondingly, intelligent application of contemporary agrarian earth sciences can be seen to complement human habitat design. Prior to the industrial revolution, applications of ancient agrarian practices equitably served the needs of humans, plants, and animals around the world for countless generations. Exponential increases in human populations and their use patterns rendered this past legacy unable to adequately deal with the challenges of our biosphere’s accelerating disequilibrium. Would it then seem we should include emerging agrarian-based bio-intensive earth sciences in order to formulate regenerative life-enhancing designs?

If we are to succeed with such efforts to help rebalance the Earth’s natural systems, we must re-envision what we do in each one of our houses, and in each backyard. The visualization of houses that are seen as “Whole Integrated Living Systems” is upon us. Such systems entail the design of space, walls, roofs, water flows, gardens, trees, etc. in ways that tie all these components into an interrelated, regenerative, synergistic system. One might think of this idea as “Whole Garden Home” design.

Human Context for the Whole Garden Home Design

The word “garden” serves as an ancient metaphor to help us visualize a common idea that powerfully conveys the essence of this regenerative concept. Here we come full circle with antiquity itself, freshly drawing our attention to the wisdom epitomized by the gardens our ancestors depended upon for their survival. Here we are with the tools of our technology and agrarian earth sciences, empowered to bring to bear the means by

which it is possible to structure the flow of energy for the benefit of all life forms affected by buildings, including people. And we now can do so with reduced dependence on the extractive processes which have characterized the industrial revolution over the past 250 years. Here we are able to conceive of a continuum whereby our nourishment of the Earth’s soil returns full circle to nourish us.

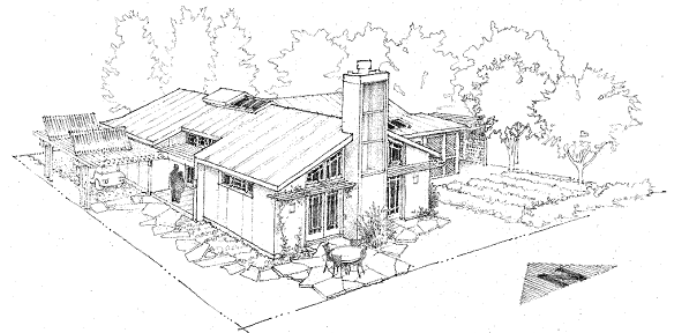
New possibilities are on the horizon for those of us who hunger for a place to nurture themselves

and the hidden world of neighboring organisms

around us. At a primordial level, we yearn for a

place to feel comfortably safe and at the same time reconnected with the natural world surrounding us. Imagine a place where one can better associate with life in all its myriad forms without interruption, throughout the year. Think of creating places crafted to rest and rejuvenate the human soul as well as the very soil beneath our feet, while enhancing the health of all creatures, great and small. Think of this as an opportunity to proactively participate in the global “green movement” by virtue of living in dwellings that consume no more energy than they produce, and homes that are designed to engender biodiversity. These ideas form the source, spirit, and inspiration for the Whole Garden Home design.

Due to rising construction costs, traditional housing options for Americans are narrowing. This is being exacerbated by increasing land and energy costs—all contributing to the diminution of future housing options for the majority of people living in Western societies. In response to the narrowing market for custom and tract-built housing, designers must rethink how to provide affordable alternatives for a broadening range of people seeking home ownership. For example, new solutions are



needed for the millions of “baby boomers” who are entering their retirement years on very moderate fixed incomes, and who often find themselves living alone—geographically isolated from their children, former spouses, and families. These are people who no longer have the guarantee of family-provided assistance earlier generations of Americans often had. These are people who are faced with the prospect of limited physical mobility issues warranting handicapped accessibility as well as “aging in place” amenities within their home and community environments. These are people who aspire to enjoy the dignity of occupying and managing their own home environment on their own terms, if only they can afford to do so. Such are the primary social and economic issues now instigating new approaches to home building design’s connections with Earth’s processes.

Because of affordability concerns for future housing consumers, including those of aging populations, there is an immediate need to rethink how we construct, use, and occupy our homes. We must rethink the lifestyle choices we heretofore have adopted and taken for granted. These challenges are destined to engender smaller sized homes requiring less land area than is customary for today’s typical single family dwelling. The issue of climate change is championing further consideration of homes that consume less energy and fewer resources.

There is also an urgent need to rethink how we manage the flow of heat energy within the very foundations of buildings. And most profoundly, there is a need to integrate these concerns into a holistic design practicum which better assures the survival of indigenous life forms inhabiting the surrounding bioregional ecosystems we all occupy.

“Believe it to be perfectly possible for an individual to adopt the way of life of the future . . . without having to wait for others to do so. And if an individual can observe a certain rule of conduct, cannot a group of individuals do the same? Cannot whole nations? No one need wait for anyone else to adopt a humane and enlightened course of action.”

M. K. Gandhi

Application of Agrarian Earth Sciences

Cuba is setting the stage for helping people visualize how it is possible to transition from fossil fuel-based economies to those centered on the use of bio-dynamic farming. In Brazil, application of permaculture earth sciences is being shared with indigenous communities with the Cerrado Biome. In India, the quantification of natural resource productivity found expression through the practice of “Natueco Culture”—a practical and elegantly simple concept developed by Professor S. A. Dabholkar. Over thirty years ago in Australia, Bill Mollison introduced the concept of permaculture, as it is being applied today in many parts of the globe. Permaculture is a concept whereby people and nature are both preserved and enhanced in concert with one another. These and many other so-called agrarian earth science technologies are globally helping people reestablish a symbiotic working relationship between human habitat and the natural world around them. This melding of the science of building technology, and home-grown agrarian earth sciences, lives at the heart of the Whole Garden Home idea. This fresh way of conceiving the design and site orientation of buildings needs to be further integrated into teaching curriculums within the academic community throughout the United States. Most of these new agrarian technologies are based on just a few fundamental tools.

Whole Garden Home Design Tools

The application of agrarian Earth sciences is based on the use of four principle design tools. These tools have been known to humankind long before written history. As in our ancient past, they form the basic elements with which it is possible to shape man-made environments that both sustain and regenerate life processes ranging from rainforest bioregions to the frigid reaches of the South Pole.

Water

A fundamental concept underpinning the “Whole Garden Home” concept has to do with on-site water flows. Contemporary housing design concepts regard water flow environs outside of building wall perimeters

to be primarily the prerogative of the building owner's personal agenda, so long as they comply with local water management regulations. As a service to building owners, surrounding land spaces are seen by designers as opportunities to complement a building's aesthetic design and functional purposes. Even now, during the early years of the 21st century, the Western world continues to send rainwater in concentrated flows away from the environs of buildings. This precious resource is then collected into extensive storm drainage infrastructures sometimes yielding outflow concentrations that wreak havoc in streams and estuaries. In America, these design concepts continue to be exacerbated by replacing misdirected rainwater with imported and chemically processed potable water supplied from distant off-site waste water treatment facilities. Where could we find similar examples in the natural world that would even remotely mirror such folly?

Instead of sending this precious resource away, and then replacing rainwater with chemically treated water derived from treatment plants, our option seems clear: capture and hold natural rainwater flows generated by impervious surfaces like the roofs of houses. This provides the first step for optimizing intelligent rainwater use first by the containment, and then careful redistribution of on-site water flows. Herein is the central concept driving the on-site water management idea. On-site water management can be seen as the collection, containment, and redistribution of rainwater and water reuse resources that occur within the geographical area of a building or home site land area.

All buildings and site improvements with impervious surfaces create concentrated water flows that differ from existing indigenous rainwater flow patterns occurring prior to their construction. When managed without the application of appropriate earth science technology, the resulting concentrated water flows are often misused and wasted. For centuries humans have known habitat ranges of flora and fauna are largely defined by the presence of water. By managing the graduated release of water flows being generated by the presence of building roofs and other

impervious surfaces, it is possible to engender new site-specific habitat ranges which encourage the proliferation of a greater range of biota. This concept thereby engenders biodiversity. Additionally, on-site management and retention of water flows yields the added benefit of ameliorating extreme off-site flooding hazards, as well as mitigating the effects of periodic drought conditions.

"What will it take for us to once again become indigenous?"

William McDonough

In the near future, nineteenth-century-designed water distribution infrastructures will be seen to be obsolescent. Reuse strategies highlighted by so called "grey water" flows (which are now prohibited or restricted in most jurisdictions within the United States) are also destined to become mainstream technologies. In fact, the issue of water conservation and reuse is no longer exclusive to communities located in dry climates. Areas averaging over 40 inches of rainfall per year are currently being reevaluated for unprecedented water conservation restrictions. Proper utilization of concentrated water flows, and their storage, must be a centerpiece for how we will interface with local biological systems. An intelligent interface of site-specific rainwater harvesting, storage, reuse, and management design is fundamental to the Whole Garden Home concept.

Sun

Indigenous cultures have for millennia understood the significance of our life-giving star, the sun. They knew without its radiant energy there would be no life—no movement of water or pressure differentials to drive the wind. They knew the dynamics of streams, rivers, and heat would be powerless without the sun. And so it should be within the realm of human habitation design today.

As previously acknowledged, one of the key elements that characterize the Whole Garden Home concept is what is known as "net zero" energy flow. This has to do with designing houses that are conceived as energy harvesters producing at least as much energy as they consume. The primary resource for this objective

has to do with intelligent management of sun-generated energy flows within buildings. One can conceive heat flows as being conveyed in ways similar to water flows. If the radiant energy from the sun is directed to flow into a building in a prescribed fashion, it is possible to store heat in that building, or deflect that same heat energy away as needed. The use of captured rainwater and “earth sheltering” combined as dynamic thermal mass storage elements can be central to the concept of retaining and releasing heat energy flows in a controlled manner.

Other proven technologies exist which are representative of this concept. Such technologies can be related to both passive and active solar systems. “Trombe” walls and water heating solar panels are examples that utilize the greenhouse effect of trapped air and/or water being heated by the sun. Inherent in these technologies is a tremendous resource for heat generation and disbursement.

Latent Heat and Earth’s Soil

Humans and many life forms have successfully participated in the evolution of life on Earth thanks to the steady-state habitat created by the sun’s warming the surface of the Earth, and its attendant global green house storage of heat energy. The stored energy of the sun’s radiant heat has persisted enough to attain immense latent heat energy reserves in the earth, thereby maintaining ground surface temperatures which can be tolerated from nightfall to daybreak, and from winter to summer.

We have only to raise latent soil temperatures of the earth about 20 degrees Fahrenheit to create comfortable air temperatures for humans. If the heating and the amelioration of heat is conceived to draw upon this tremendous energy resource which lurks beneath every land habitation on Earth, very achievable active solar energy inputs can be derived. Relative to temperature variations typically found in non-tropical environments, the temperature of soil and related geological structures is a steady-state heat resource that can always be harvested. In temperate climates, one has only to dig little more than four feet into the earth to access the steady-state temperatures found there. Geothermal

heat pump technology is most representative of drawing from or depositing heat energy into Earth’s immense heat sink. Thanks to concepts known as “earth sheltering” there are economically feasible ways to harvest the Earth’s latent heat energy thereby reducing the need for human-made energy inputs.

Sealed crawl spaces are gaining acceptance in the United States. These enclosures are changing the way designers can improve the thermal performance of houses. Yet more is to be gained with this concept. The foundations we are designing today often sadly miss the opportunity to harvest the latent heat energy held captive by Earth’s crust. By carefully determining the excavation depth of open plenum crawl space designs, it is possible to bring steady-state temperatures to the lower structure of any building, and then capitalize on these universally available heating and cooling inputs.

When based on use of agrarian earth technology, soil quality management is an essential component towards achieving the design objectives of the Whole Garden Home concept. Along with the presence of water and climatic air temperature, the nature of soil, and the variation of its characteristics largely determines the range and successful propagation of biota. Indigenous soil’s life-supporting capability is inevitably diminished whenever humans endeavor to create shelter for themselves. However it is quite feasible to reconstitute the initial damage done when we build. The reintroduction of select plants, animals, and microbial organisms into soils compromised by construction activity can be seen as fundamental to the “regenerative” process William McDonough promotes. In other words, the restoration of soil and the life systems it supports is fundamental to not only restoring and sustaining, but enhancing the regenerative capacity of buildings to support neighboring life forms.

Plants and Microbiotic Life Forms

Landscaping continues to be assigned the primary purpose of adding ornamental interest to the visual composition of buildings and their surrounding land spaces. As an adjunct to this way of thinking, designers must add a

further element to these purposes. They need to include the introduction and establishment of an expanded variety of indigenous life forms, primarily microbiotic organisms, edible plants, and xeriscaping designs that enrich local community habitats, thereby encouraging biodiversity.

If the designs of our future habitations are meant to serve this simple concept, the implications are clear. We must see the environs of a building's exterior environment to be as much a part of human support system design as the interior of buildings. That is to say, when we create habitable space, the architecture of that space is comprised of both buildings, and the life forms they engender beyond their physical peripheries. Buildings and houses can no longer be conceived as somehow separate from the natural life processes surrounding them. Instead they must be conceived in a way that is similar to man-made artificial reefs in the ocean. Appropriately constructed reefs create havens of life-enhancing habitat. They serve as islands of refuge capable of supporting greater densities and varieties of indigenous life forms as compared to surrounding ocean bottom habitat. Like coral reefs in the ocean, houses can be conceived as "Garden Reefs" offering havens for rich diversities of life forms. The application of agrarian earth sciences provides a gateway to this end.

Off-Site Fabrication Technologies

Panelized and modular prefabricated building technologies are the wave of the future. New material fabrications comprised of "locally" derived, recycled, and lower "embodied energy" materials are exponentially expanding the potential to build the Whole Garden Home concept. Designers are now able to conceive highly energy efficient building envelopes, both above and below the surface of Earth. Current use of panelized concrete foundation design is gaining acceptance. Another example is the use of structurally integrated panels possessing outstanding thermal-control characteristics for walls and roofs. At the heart of using these prefabricated components is the advantage of their being assembled on-site within a few days, thus sig-

nificantly lowering relevant on-site labor costs and energy consumption.

As we draw upon new prefabrication technologies, it is important to include consideration for locally derived materials and services. Use of construction materials indigenous to the building site locale characterizes how our ancestors built their habitations. This previously addressed "embodied energy" concept deals with consumption of energy and resources required to extract, transport, fabricate, construct, maintain, and recycle a given building component or material, from cradle to cradle as William McDonough has explained. A key contemporary application of the embodied energy concept includes consideration for the recycling and reuse of products and materials used in building construction. Here we yet again find a direct corollary to the wisdom of mimicking the life cycle processes nature has evolved over several billions of years. Everything in nature is recycled. Each time we drink a glass of water the liquid contained within it has sustained the lives of countless life forms that co-existed long before our presence on Earth today. Being in touch with this life process helps us understand how we are all connected, and how it is we all are of the same source.

"Whatever befalls the Earth, befalls the sons and daughters of the Earth. This we know. All things are connected like the blood which unites one family. All things are connected."

Chief Seattle

The rising cost to produce conventionally conceived buildings is creating a need to find fresh alternatives. If one analyzes all energy uses on a construction site, one of the largest energy consumers involves the repeated transportation of construction crews and materials to and from building sites. This amounts to roughly 25% of the total energy needed to construct a building. In response, we are witnessing a trend towards the application of newer modular and "panelized" technologies that promise lower cost advantages. Prefabrication utilizes labor and material resources that are concentrated at one pre-assembly facility, thereby reducing the amount of labor and materials otherwise dis-

bursed to distant building sites. As proof of this, the economic advantage to modular home construction is reflected in the proliferation of mobile homes, recreational trailers, and the like. For decades prefabricated homes have been the mainstay alternative for people who cannot afford to live in conventionally built houses. With the exception of highway construction, houses are the greatest consumers of embodied energy. We can no longer afford to sustain the economic costs of such wasteful practices, or the environmental consequences they generate.

Whole Garden Home Design Objectives

The preceding ideas set the stage for rethinking the way we build, and the way we live. If we were to conceive of a house as being a ship at sea, we could not imagine that ship maintaining land based connections to water lines and fossil fuel supplied power lines. The time is upon us to envision houses and buildings as sailing ships of yore, each supporting and protecting ALL their precious passengers while capturing the sun-generated forces of wind. Such houses are destined to harvest the power of the sun, while nurturing all “those” traveling along with them.

The prefabricated “Whole Garden Home” idea centers on six key objectives:

1. **Affordability** by using locally derived, prefabricated building products which are seen as more durable, as well as aesthetically and functionally superior in design.
2. **Enhancement of both human and planetary health** by adopting LEED (Leadership in Energy and Environmental Design) and related “green-build” standards which serve to minimize energy and resource consumption.
3. **On-site water use management** engendering “regenerative” natural processes, and which can also serve to augment appropriate heat energy and water usage flows.
4. **Solar-based technologies** whereby “net zero” energy consumption patterns can be achieved as a basic requirement and even exceeded wherever opportunities are available
5. **Integration of the human waste stream** into the natural processes found in nature whereby both black and grey water flows, along with biodegradable material streams, are components of on-site designs healthy for humans, and regenerative for the biota living near them.
6. **Engenderment of synergistic connections with nature and the human psyche** via integration of beautiful interior and exterior environments such connections form a backdrop combining landscaping/gardening, interior spaces, water flows, and energy flows . . . all contributing towards the rejuvenation of people who are witnessing and experiencing their active contribution to the welfare of Mother Earth.

The time of anthropocentrically designed buildings must come to an end. In our immediate future we must envision buildings and homes that serve both humankind, and the communities of life forms they impact.

*“One must touch this Earth lightly.”
Ancient Australian Aboriginal saying*

Where is the Universe in the Universe Story?

BY HERMAN F. GREENE

The “Universe Story,”¹ the story of the evolutionary development of the universe from the Big Bang to the Ecozoic Era, is one of the key understandings and tools for those who have been influenced by the work of Thomas Berry. Anne Marie Dalton concluded that the cultural solution proposed by Berry to the ecological crisis “was simple, but radical; a new story of the universe to inform and reinvent modern culture in all of its expressions.”² In Berry’s own writings, the Universe Story is given first priority in the “Twelve Principles for Understanding the Universe” as presented in *Evening Thoughts*³:

The universe in its full extension in space and in its sequence of transformations in time is best understood as story: a story known in the twentieth century for the first time with scientific precision through empirical observation. The greatest single need for the survival of the Earth or of the human community in the twenty-first century is for an integral telling of the great story of the universe. This story must provide in our times what the mythic stories of earlier times provided as the guiding and energizing sources of the human venture.

Much of the effort of those in the Berry community⁴ has been devoted to transmitting the Universe Story. The “cosmic walk,” a rehearsal of the Universe Story, has become an important ritual.⁵ Many lives have been transformed by this story, and its power to inspire, motivate and inform has been proven.

For some time, however, I have had doubts about some aspects of the Universe Story, specifically about the role of the Universe Story in bringing about change, its capacity to speak across cultures, and its place in Thomas Berry’s thought. Further, I have had questions

about how the Universe Story should be used and what parts are important to establishing a cosmological grounding for an ecozoic culture. I take it as given, without discussing it here, that cosmology considered broadly (see below) is the foundation for an ecozoic society. By this I mean that an ecozoic society is one that is self-consciously and mystically grounded in the dynamics of the universe.

In this paper, I will discuss how my questions concerning the Universe Story arose, philosophical cosmology and the Universe Story, and the place of the Universe Story in Berry’s thought. I will close with a statement concerning the place of the Universe Story in the Great Work.

How My Questions Concerning the Universe Story Arose

If you open the website www.ecozoicstudies.org and go to “Foundational Papers,” you will see a paper entitled “Call for an Ecozoic Society.” It was the first paper I wrote based on the understandings I had received from Thomas Berry and Brian Swimme. In it I identified the New Story as one of three key building blocks of an ecozoic society. I stated:

The New Story—the narrative of the creative development of the Universe from the primordial flaring forth to the emergence of the Ecozoic Era—is one of the building blocks of an Ecozoic Society. At once a scientific account and an epic myth of origins, this story relates how things came to be and what significance and role humans have in the ongoing drama of the cosmos. The dual nature of the story, its blending of the scientific and the meaning-giving mythological, is what makes it the “New Story.” A primary source for learning about this

¹ By “Universe Story” I mean the story presented in Brian Swimme and Thomas Berry, *The Universe Story: From the Primordial Flaring Forth to the Ecozoic Era* (San Francisco: HarperSan-Francisco, 1992) and variant presentations of this story by those who have been drawn to it.

² Anne Marie Dalton, *A Theology for the Earth: The Contributions of Thomas Berry and Bernard Lonergan* (Ottawa, Ontario: Ottawa University Press, 1999), 2.

³ Thomas Berry, “Appendix 1-Twelve Principles for Understanding the Universe,” *Evening Thoughts: Reflecting on Earth as Sacred Community*, ed. Mary Evelyn Tucker (San Francisco: Sierra Club Books, 2006), 145.

⁴ By “Berry community” I mean the community of people whose work has been influenced by Thomas Berry, of which I am a part.

⁵ <http://www.threeeyesofuniverse.org/cosmicwalks/TheCosmicWalk.html> (accessed June 25, 2008) gives links to several versions of the cosmic walk, which it describes in this way: “The Cosmic Walk is a ritual created by Sr. Miriam MacGillis of Genesis Farm. It has subsequently been modified and facilitated by many people around the world. The Cosmic Walk is a way of bringing our knowledge of the 14-billion-year universe process from our heads to our hearts.”

⁶ Conversion may have some negative connotations associated various kinds of religious conversion. At its root though, the word means “to turn around.”

⁷ Paul F. Knitter, “A Common Creation Story? Interreligious Dialogue and Ecology,” *Journal of Ecumenical Studies*, 37:3-4, Summer-Fall 2000. 285-300.

⁸ Dr. Knitter notes “the dangers of ‘common stories’ or ‘meta-narratives.’” The “root of this danger” he writes, *has to do with the way universals tend to skip over the reality of language—which means the reality of how language makes all that we know and say always limited and often lethal. . . . One does not have to agree fully with Michel Foucault to get his point that language is tied to power. . . . [T] he words we use and the stories we tell in order to know and communicate not only limit what we are saying; they can also be used to limit and control and devalue what others are saying. Language, in other words, is not only culturally conditioned; it is also politically and economically conditioned. This is why we of the so-called “first world” are told by our friends in the “two-thirds world” that the language that is used in cross-cultural conversations is usually the language of those with the most economic power.* Ibid., 287 (citation to Michael Foucault omitted).

⁹ While Dr. Knitter began with citing the draft of the Earth Charter, he made clear that he was addressing the common creation story advanced by Brian Swimme and Thomas Berry in *The Universe Story*. Ibid., 285.

¹⁰ Knitter, 286. In support of this statement he offered this quotation from page 255 of *The Universe Story*: “We are . . . at a time when these earlier traditions can no longer, out of their own resources, provide adequate guidance in the task that is before us.”

story is Swimme and Berry’s *The Universe Story*.

The New Story needs to be told in myriad ways. It needs to be taught. It needs to be read in bedtime stories. It needs to be told at the hearth and campfire. It needs to be sung. It needs to be danced. It needs to be expressed in liturgy and art. It needs to be beaten on drums. Orchestral works, operas and oratorios need to resound in celebration of the evolutionary adventure taking place throughout the Universe.

But, you might ask, as exciting as this New Story is, why is it so important? There are three reasons. First, the New Story awakens a sense of the awe and mystery of existence and of our participation in the cosmological order of the Universe. Second, the New Story reconnects the self (and so restores the self) with that which is more primordial than family, tribe, clan or nation—the self’s relationship with the natural world from which it came and of which it is a part. Third, the New Story provides a unifying mythology for all human cultures and a basis for common action in the realization of the Ecozoic Era.

If one can speak of being a Universe Story convert, I was a convert.⁶

At that time it was evident to me that the Universe Story was true, could be accepted by people of all cultures and would accomplish all those things described above. There were three things to emphasize in bringing about an ecozoic society: the Universe Story, bioregionalism and ecological spirituality. I suppose I realized that those people who did not accept evolution might find the Universe Story difficult to accept, but I felt that this was something more to overcome than acknowledge. The Universe Story was necessary and essential and eventually it would be the common story of all peoples.

Transcultural Creation Story

The first time I came to have questions about the Universe Story was when I defend-

ed it vigorously in the face of what I saw as an attack on it. In 2002 I was a D.Min. student at United Theological Seminary in Dayton, Ohio, in a program on “spirituality and sustainability.” I was assigned to read “A Common Creation Story? Interreligious Dialogue and Ecology” by Paul Knitter,⁷ who as well as being the author of the article was one of my teachers. Dr. Knitter challenged the assertion found in a draft of the Earth Charter that “for the first time in our history, we have empirical evidence for a common creation story.” He wondered if the people expounding this position were not developing another meta-narrative to be imposed by the West on others. It was the first time I had been exposed to the deconstructive post-modernist attack on meta-narratives. To deconstructionists, a meta-narrative is a narrative that one cultural group might see as universal when in reality it is an assertion of cultural superiority in support of a culturally imperialistic agenda.⁸

I was so offended by Dr. Knitter’s argument. I mean, did he know Thomas Berry? (He did.) How could he think the great cultural historian Berry could be the source of a culturally imperialistic meta-narrative?⁹ Further, didn’t he understand how the secularization of global culture and the rise of fundamentalisms called for some new unifying story? And, didn’t he understand that empirical science was culturally neutral?

Dr. Knitter said that Berry called for “‘primary loyalty’ to the new creation story” and “announced that, unless religious communities realign their traditional creeds in view of the earth as the primary revelation and context of religious experience, they will not be able to respond adequately to the sensitivities and needs of our third-millennium world.”¹⁰ And I asserted strongly that this was indeed the case.

As an alternative to a unifying meta-narrative, Dr. Knitter said unity could be found in dealing with meta-problems such as the environmental crisis. He felt a common ethical calling would promote the needed unity in dealing with these problems better than the Universe Story.

He didn’t win the argument with me that night as we studied his paper, but I realized that a sensitive person whom I respected and who knew the Universe Story had concerns

about its role and use, and this made me wonder.¹¹

Based on Empirical Science

It was only in the back of my mind that I wondered about whether the Universe Story could communicate across cultures. In the forefront of my mind I felt that it could because it was based on empirical science and ultimately people would accept what had been determined to be true by science. Further I felt that the new sciences based on relativity, quantum mechanics and evolution were keys to understanding the world. The Big Bang theory had become the scientific consensus in the 1970s and seemed to provide an exceptionally well supported account of how the expanding universe began, right down to the first three seconds, even to the instant in time 13.7 billion years ago when the singularity gave way to the jubilant multiplicity that began the Universe Story. It was a marvelous story and I joined in those joyous celebrations where we reenacted the transformational moments in the unfolding story of the universe. This was science and it was spirit.

My confidence in the scientific basis of the Universe Story, however, was shaken as I became exposed to scientists who were not convinced that the Big Bang theory is valid. One of these is Dr. Timothy Eastman, a space plasma physicist and consultant (who also works for Perot Systems at NASA), who

joined with more than 200 other scientists worldwide in calling upon the scientific community to support physical cosmologists who pursue theories at odds with the Big Bang theory.¹² He wrote:

There is no current model in physical cosmology that adequately meets all key [scientific] observations—thus my “cosmic agnosticism.” . . . For those scholars in philosophy and religion who use research results in physical cosmology, I recommend caution and encourage the recognition at least that such debate exists and is part of ongoing research.

Dangers in too closely linking science and religion are clearly articulated by [Sir Arthur] Eddington: “The lack of finality of scientific theories would be a very serious limitation of our argument, if we had staked much on their permanence. The religious reader may well be content that I have not offered him a God revealed by the quantum theory, and therefore liable to be swept away in the next scientific revolution.”¹³

I had several opportunities to enter into discussions with Dr. Eastman about the problems he saw in the Big Bang theory. I began to wonder if we of the Berry community weren’t making the Big Bang into a fact when it was after all a theory (or, perhaps, more completely described as a scientific research program)

¹¹ Anne Marie Dalton also expressed concern about the deconstructionist critique of meta-narratives as applied to the Universe Story: *There remains the question of the importation of Western scientific cosmology into other cultures. While this is already occurring in many ways and no doubt Western science is almost everywhere to stay, the question is whether or not one ought to propose a story that incorporates a Western scientific cosmology into other cultures. This is a vast question that requires extensive investigation both at the empirical level as to what is already the case in particular circumstances and in terms of the compatibility of the means and values of this cosmology with the cosmological stories of other cultures.* Dalton, *A Theology for the Earth*, 3.

¹² See “An Open Letter to the Scientific Community,” published in *New Scientist*, May 22, 2004; available at www.cosmologystatement.org/ (accessed June 10, 2008). This letter has been signed by 218 professional scientists and 187 independent researchers.

Footnotes continued to left

Footnotes, cont.

¹³ Timothy Eastman “Cosmic Agnosticism,” prepared for a conference on “Cosmology & Process Philosophy in Dialogue: Fundamental Philosophical Issues in Recent Cosmology and their Religious Significance” held on October 5-8, 2006, in Claremont, California, 1, citing Arthur S. Eddington, *The Nature of the Physical World* (Cambridge: Cambridge University Press 1928), 353. Dr. Eastman’s paper is available at www.ctr4process.org/programs/LSI/2006-Cosmology/EastmanT%20-%20Cosmic%20Agnosticism.pdf (accessed March 2, 2008); and has since been revised and published in *Process Studies* 36:2 (February 2008). The quotation in text is found on page 182 of the paper as published in *Process Studies*.

Citations to page numbers in Dr. Eastman’s paper in this article will, except as otherwise noted, be to the *Process Studies* edition.

In this paper, Dr. Eastman gives information on the work of scientists who question the Big Bang theory and on leading problems with the theory, which he lists in part as

- continued evidence of anomalous alignments and non-Gaussianity in data from the Wilkinson Microwave Anisotropy Probe (WMAP, see map.gsfc.nasa.gov), which indicate non-primordial [cosmic microwave background] components (e.g., Copi *et al.*, 2006)
- age problem for [Big Bang] of certain high redshift objects (e.g., Jain and Dev, 2006);
- difficulties explaining Lithium 6 (⁶Li) isotope observations—Given that ⁷Li is reduced by a factor of four in stars as required for [Big Bang], ⁶Li should be even more effectively destroyed, but is not (e.g., Steigman, 2006); and
- direct experimental tests for “dark matter” have continued for over twenty years without any definite conclusion (e.g., Freeman and McNamara, 2006). *Ibid.*, 184.

subject to change.¹⁴ I wondered if we weren't creating a "Genesis 1 problem," that of confusing meaning-giving myth with scientific fact and, in doing so, tying ourselves "religiously" to a particular scientific theory.

The concern in this paper is not, however, who wins the scientific argument, but whether we would not be wise in developing a cosmology for an ecozoic society to follow the advice of Sir Arthur Eddington above, which is that given the lack of finality of scientific theories, we should not stake too much on their permanence.

Before leaving the issue of the grounding of the Universe Story in empirical science, I would like to look briefly at the premise that it is so grounded and the philosophical contradictions involved in stating that it is so grounded. *The American Heritage Dictionary* defines "empirical" as

1. a. Relying on or derived from observation or experiment: *empirical results that supported the hypothesis.* b. Verifiable or provable by means of observation or experiment: *empirical laws.*

¹⁴ For additional information about scientists who have reservations about the Big Bang theory see *Alternative Cosmology Group Newsletter - 2007 Year End Review*, available at www.cosmology.info/newsletter/2007_year_end.htm (accessed May 10, 2008). Eric J. Lerner's article, "Cosmology in 2007: A Year-End Survey," from that issue states:

In the past year, evidence against the conventional Big Bang model built up on several fronts. The evidence that the cosmic background radiation (CBR) is not randomly spread across the sky, as the inflationary Big Bang predicts, has become overwhelming. The contradictions between Big Bang predictions of the abundance of light elements and observations continue to get worse. In addition, new observations have contradicted the conventional concept of a universe that is homogenous and isotropic, demonstrating alignments of galaxies on extremely large scales.

Unfortunately, the accumulation of evidence hasn't yet sparked a general debate in cosmology over whether the Big Bang model is a valid one. But there are a few small signs that there is beginning to be a greater openness to questioning at least some aspects of the "convergence cosmology" and its ever-growing grab-bag of hypothetical constructs, like inflation, dark matter, dark energy, and quintessence. As conventional cosmologists leap ever higher into the realms of fantasy, even the popular press is starting, ever-so tentatively, to wonder if the Emperor really is naked.

Footnotes continued to right

2. Guided by practical experience and not theory, especially in medicine.¹⁵

The Big Bang theory cannot be empirical in this sense. As Mark Stuckey, reflecting on theories regarding the development of the universe, writes, "By any reasonable definition, science is a study of reproducible phenomena, thus [physical] cosmology (as with any study of history) is not a science."¹⁶ Further if it is science, it is a funny kind of science filled with imaginative constructs that cannot be based on observation, experiment or experience, such as wormholes and multiple universes which are not falsifiable in principle and thus, by some accounts, not properly scientific. Such extended hypotheses are necessarily incorporating elements of what we here call philosophical cosmology (see below) and not just scientific propositions associated, for example, with certain mathematical expressions, which may be based on problematic assumptions or involve extensive ambiguities in interpretation. In addition, the data on which it is based is scant.¹⁷ As Paul Overbye writes in the *New York Times*, scientists know

Footnotes, cont.

As examples of such articles in the popular press, see Dennis Overbye, "Knowing the Universe in Detail (Except for That Pesky 96 Percent of It)," *New York Times* (online edition), October 24, 2006; available at www.nytimes.com/2006/10/24/science/space/24essa.html?_r=1&ex=1162353600&en=7ff2f4eb8f74dc2b&ei=5070&emc=eta1&oref=slogin, and "Dark Perhaps Forever," *New York Times* (online edition), June, 3 2008; available at www.nytimes.com/2008/06/03/science/03dark.html?ex=1213156800&en=9956d8f60679b8bf&ei=5070&emc=eta (accessed June 10, 2008).

¹⁵ *The American Heritage Dictionary of the English Language*, 3d ed. (New York: Houghton Mifflin Company, 1992).

¹⁶ Mark Stuckey, "Review of Paul T. Brockelman's *Cosmology and Creation, The Global Spiral*, *Metaviews* 019, 2002.02.13. available at <http://www.metanexus.net/magazine/ArticleDetail/tabid/68/id/2573/Default.aspx> (accessed June 10, 2008). William Stuckey is a professor of physics at Elizabethtown College, Elizabethtown, Pennsylvania. Paul Brockelman is a professor of religion and philosophy at the University of New Hampshire.

¹⁷ The quick summary of Michael J. Disney's article "Modern Cosmology: Science or Folktale?," which appeared in *American Scientist* 95, no. 5 (September-October 2007), available at amscicms.eresources.com/issues/pub/2007/9/modern-cosmology-science-or-folktale (accessed June 24, 2008), is given as "Current cosmological theory rests on a disturbingly small number of independent observations." Disney writes: *My limited aim here is [to look] at the development of cosmology over the past century and to compare the growing number of independent relevant observations with the number of (also growing) separate hypotheses or "free parameters"*

that have had to be introduced to explain them. Without having to understand the complex astrophysics, one can still ask, at an epistemological level, whether the number of relevant independent measurements has overtaken and surpassed the number of free parameters needed to fit them—as one would expect of a maturing science. . . . What one finds, in my view, is that modern cosmology has at best very flimsy observational support. *Ibid.*, 2 (online edition).

With regard to where cosmology is now, he states:

In its original form, an expanding Einstein model had an attractive, economic elegance. Alas, it has since run into serious difficulties, which have been cured only by sticking on some ugly bandages: inflation to cover horizon and flatness problems; overwhelming amounts of dark matter to provide internal structure; and dark energy, whatever that might be, to explain the seemingly recent acceleration. . . .

The historian of science Daniel Boorstin once remarked: "The great obstacle to discovering the shape of the Earth, the continents and the oceans was not ignorance but the illusion of knowledge. Imagination drew in bold strokes, instantly serving hopes and fears, while knowledge advanced by slow increments and contradictory witnesses." Acceptance of the current myth, if myth it is, could likewise hold up progress in cosmology for generations to come. *Ibid.* 4 (online edition).

"Michael J. Disney is emeritus professor in the School of Physics and Astronomy at Cardiff University, has done research on stars, pulsars and quasars, but his main interest has always lain in galaxies and in designing novel instruments to observe them at many wavelengths. He has worked on the development of Hubble Space Telescope instruments since 1976." *American Scientist Online* www.americanscientist.org/authors/detail/michael-j-disney (accessed June 24, 2008).

the universe in detail “except for that pesky 96%.”¹⁸ What is known of physical cosmology is based on some observational data, but mostly on mathematical calculations seeking to interpret,¹⁹ or one could as well say extrapolating from, that data.²⁰ And perhaps most tellingly for the Universe Story as those of us in the Berry community have come to know it, the scientific underpinnings for the standard model of the universe are sometimes at variance with important philosophical understandings of the Universe Story. For example, Professor Stuckey observes that “general relativity (GR, the parent theory to [Big Bang cosmology]) admits non-dynamical alternatives. . . . As a whole spacetime is an atemporal structure.”²¹ General relativity may not support such interpretive parts of the Universe Story as “irreversible sequence of transformations,” “cosmogogenesis” or even that “the universe is an unfolding story.”²²

This discussion of whether the Universe Story is grounded in empirical science has thus far only dealt with the scientific account of the origin of our universe. The science on the history and development of Earth rests on much more observational data and thus may have a greater claim to be “empirical.” But Earth presents mysteries matching the origin of the universe and its development, and that is the origin of life and later consciousness and their development. First there is the issue of whether life and later consciousness is simply an epiphenomenon of “dead” physical elements and structures that compose living beings. In the Universe Story, the universe has had a psychic-spiritual dimension from the beginning.²³ Then there is the issue of how living beings have evolved. “Evolution” is not a term with a single meaning. The term covers a wide range of understandings, some of which, including both Darwinist and neo-

¹⁸ Dennis Overbye, “Knowing the Universe in Detail.”

¹⁹ In *The Universe Story*, Swimme and Berry lend approval to the discovery of truth about the universe through mathematical formulations. They write, “The mathematically formulated designs of the scientists are not the unrestrained fantasies of humans; they refer to something ultimately real.” *Ibid.*, 39. This does not, however, make mathematical formulations “empirical.” And one would wonder if it would not be true that some mathematical formulations of the universe produce results which, while hypothetically real, have no reality behind them.

²⁰ Dr. Eastman distinguishes the data available from direct testing in place (in situ) and that available from remote sensing. He notes how planetary and space physics have in situ data available, while astrophysics and physical cosmology necessarily rely on remote sensing:

The domain of our direct knowledge of the cosmos has now reached to the outer solar system and is reflected in the great advances made in space physics and planetary science in the past half century through both in situ observation and remote sensing. Even without the practical possibility of in situ observation, astrophysics has made similarly dramatic progress in understanding stars, galaxies, galactic clusters, and the intervening interstellar and intergalactic medium although many fundamental questions remain for all these systems (Kundt, 2005). For physical cosmology, the fourth area of modern astronomy or space science, extrapolations from scientific foundations such as quantum theory, for which we have very high levels of confirmation, are being stretched to the limit.

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As stated by astrophysicist Wolfgang Kundt, “frontline physics is not as unique and reliable as the multiply tested physics of every-day life. The further the frontline advances towards unreachably large, or unresolvably small separations, or timescales . . . [the more] plausible assumptions have to replace redundant experience, and hasty interpretations can lead astray.” One danger, according to Kundt, is that “Our politically organized society then takes care of suppressing minority opinion” (Kundt, 2001). I personally witnessed the interplay of economic, social, political, and scientific factors on this issue while serving as a Branch Chief in the Space Physics Division at NASA Headquarters in the late 1980s. The hot Big Bang research program has been highly successful in generating fruitful scientific hypotheses and tests, and has achieved a significant level of confirmation for many hypotheses (Peebles, 1993). However, outstanding questions remain and substantial alternative cosmology models, which also have been fruitful, remain and continue to evolve. For example, Kundt favors cold big bang cosmology (see Layzer, 1990); Burbidge and Narlikar favor a quasi-steady state cosmology (Hoyle, Burbidge, and Narlikar, 2000; Narlikar, 2002); Peratt and Lerner favor an updated plasma cosmology (Peratt, 1991; Lerner, 2003), and there are others. Personally, I do not know how BB or any of these alternative approaches will stand up to future tests using burgeoning new data sets and future critical tests and falsification instances. At the present time, I see both advantages and serious problems for all options – they may all be wrong – thus, my “agnosticism” in physical cosmology. Eastman, 190-91.

²¹ Professor Stuckey writes: *Contrary to what is often reported—spacetime is not dynamic in GR. That is spacetime doesn’t “do” anything. Neither is it “static.” Each point of the spacetime manifold “is,” “was,” and “will be” relative to some other point(s) of the manifold under various foliations into space-like hypersurfaces, i.e., collections of universal “present.” As a whole spacetime is atemporal.* Mark Stuckey, “Review of Brockelman’s *Cosmology and Creation.*”

²² Professor Stuckey cites Graham Nerlich for his statement regarding the metaphysical belief in the passage of time, which he says is a myth:

“The image of time’s passage or flow is the image of an ontically preferred time (the present) moving along a space-like dimension in which events lie ordered (which I will call supertime). The myth of passage is thus tied to deep, but generally inarticulate beliefs which give rise to a picture on which there is a dualism (or a still higher ascending regress) of times.”

Ibid., quoting Graham Nerlich, *What Spacetime Explains* (Cambridge, UK: Cambridge University Press, 1994), 233.

For a discussion of this issue by scientists, including David Bohm and Ilya Prigogine, and philosophers, including David Ray Griffin, arguing for temporality, see *Physics and the Ultimate Significance of Time: Bohm, Prigogine, and Process Philosophy*, David Ray Griffin, ed. (Albany, NY, SUNY Press, 1986).

²³ On page 44 of *The Universe Story*, Swimme and Berry write of “the psychic depths of the universe.” They explain on page 40, “From the quantum perspective on the evolutionary universe, each process is ultimately indivisible. No experience can be simplistically divided up into inner and outer aspects where the outer aspects such as “position” refer simply to the objectively existing universe, and the inner refers simply to the subjectivity of the experiencing being. The elements of experience cannot be assigned a simple, univocal origin.” Concerning the human, they write of how “the human being within the universe is a sounding board within a musical instrument. . . . We often forget [the] deeper psychic dimension of things that activate[s] our awareness.” *Ibid.*, 40-41. They write, “That the universe is a communion of subjects rather than a collection of objects is the central commitment of the Ecozoic.” Also they write, “There are similarities between the unity of Earth’s functioning and the unity of functioning of any other living being that justifies the use of the term *organic* to describe the inner coherence and integral functioning of the planet Earth.” *Ibid.*, 243.

Darwinist, are not compatible with the understandings of the evolution of life on Earth expressed in the Universe Story.²⁴

Thus, it seems to me the statement that the Universe Story is based on empirical science, especially those parts pertaining to the early universe, is misleading. The statement that the Universe Story is the marriage of religion and science, as though there are no tensions between the philosophical implications of certain scientific understandings and the philosophical cosmology presented in the Universe Story, is especially misleading. None of this is to say that the understandings of contemporary science, especially the new sciences beginning with Darwin's theory of evolution and continuing through special and general relativity and quantum mechanics, and the discoveries of the physical characteristics of our world, do not have something to say to philosophical understandings of the nature of the universe. But, what is important to understand is that the Universe Story, as presented by Swimme and Berry, is as much a critique of contemporary science as it is an expression of it.

The New Cosmology

As I began to see that there was a distinction between the "facts" described in the current scientific consensus on the origin and development of the universe and the meaning given to these facts, I began to wonder how the factual account of the development of the universe could be a cosmology. I read a paper by Wesley Wildman which stated:

Physical cosmology is a discipline within the physical sciences that famously provokes many boundary questions with metaphysical and theological significance. Some of these questions are debated in the community of scientists studying physical cosmology when they need to clarify their procedures and whether what

they are doing still counts as science. As complex as methodological questions in physical cosmology can be, these self-policing activities among scientists are just the tip of the iceberg of philosophical debate. Because physical cosmology concerns all of physical reality, at least in some aspects, its discoveries and theories and problems possess significance for the parts of philosophy and theology that ponder nature as a whole. For the sake of convenience, I shall follow Alfred North Whitehead and call these broader ventures "philosophical cosmology," collecting both philosophy of nature, ontology of nature, theology of nature, and the cosmological parts of natural theology into the semantic net.

The inferential journey from physical cosmology to philosophical cosmology is complicated—far more complicated than is sometimes supposed by eager physicists and theologians.²⁵

I came to wonder if in our eagerness to provide through the Universe Story a contemporary unifying mythology "based" on the scientific story, we were papering over the distinction between scientific or physical cosmology and philosophical cosmology. It seemed to me that in our telling of the Universe Story there has been an unwarranted inference that the latter necessarily followed from the former in ways that were obvious.

Philosophical Cosmology and the Universe Story

"Philosophical cosmology" means those understandings we have as humans of what kind of world we live in. They are the understandings needed for human thought and action. They are the understandings of what

²⁴ For fuller discussions of this, see John Haught, *Deeper than Darwin: The Prospect for Religion in the Age of Evolution* (Cambridge, MA: Westview Press, 2003), and John B. Cobb, Jr., ed., *Back to Darwin: A Richer Account of Evolution* (Grand Rapids, MI: Walter B. Erdman Publishing Company, 2008).

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²⁵ Wesley J. Wildman, "The Theological and Metaphysical Import of Contemporary Cosmology," prepared for a conference on "Cosmology and Process Philosophy in Dialogue: Fundamental Philosophical Issues in Recent Cosmology and their Religious Significance" held on

October 5-8, 2006 in Claremont, California, available at www.ctr4process.org/programs/LSI/2006-Cosmology/WildmanW%20The%20Theological%20and%20Metaphysical%20Import%20of%20Contemporary%20Cosmology.pdf (accessed March 2, 2008).

the universe is for us (albeit in the light of modern science).²⁶ This—philosophical cosmology—is different from what scientists need to know—physical cosmology—to provide scientific explanations of the universe and to make predictions of physical events occurring in the universe.

In the Berry community, the Universe Story is often presented as a timeline, a factual account of the history of the universe, though never only that. As I worked through these things over a period of years, I began to see there is a different way of understanding where the universe is in Thomas Berry's and Brian Swimme's Universe Story than in the timeline they present. This "never only that" is what I will write about in the remainder of this paper. This different way doesn't take away the value of the narrative account of the universe story that has been so important in the Berry community. It does provide space

between "the universe" and a particular scientific rendering of the universe story. It allows the scientific story to be what Connie Barlow and Michael Dowd call "the story of the changing story,"²⁷ while keeping those understandings, such as cosmogenesis, that we believe would be supported, at least to some degree, in any present or future scientific account of the universe²⁸ and that are most important for the humanistic enterprise of building an ecozoic society.

The Universe Story Revisited

The Universe Story as presented in *The Universe Story* is clearly something more than the telling of the scientific account of the universe.²⁹ At the very beginning, the authors separate their work from the work of science. They state, "The scientists have arrived at detailed accounts of the cosmos but have focused exclusively on the physical dimen-

²⁶ The question whether the universe as it is for us is the universe as it is (that it is so is called in philosophy the "realistic" perspective) is one of the great debates in modern philosophy. Kant distinguished the noumenal world, the world as it is, from the phenomenal world, the world known to us by our senses. To him we know the phenomenal world through certain pre-experiential forms of knowledge, such as cause and effect and time directionality. These modes of thought are sufficient for us to navigate and manipulate the world but insufficient to know the world as it is. This meaning of the term "phenomenal world" in philosophical circles is so widely established that I have criticized Berry's use of the term in his aphorism that the universe is the text for which there is no context in the *phenomenal world*. In Berry's cosmology at times there is a certain dualism between being and existence that may make his usage of the term consistent with Kant's, though not because Berry is Kantian. For Berry it is because of the influence of Aquinas and Aristotle on his thinking. (Berry divides being and existence, rather than mind and matter.) The Universe Story as presented in the book by that name, however, rests in large part on understandings from Teilhard de Chardin and Alfred North Whitehead, both process thinkers. At least the latter is considered a philosophical realist who would perhaps say simply, the universe is the text without context. While Berry was influenced by both Teilhard and Whitehead, Swimme is more consistently consonant with their understandings than Berry.

That "the universe as it is for us is the universe as it is" is necessary to some of Berry's recent thoughts where he has stated "the

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human activates a dimension of the universe," "the human is not a dimension of the universe, but a mode of being of the universe," and even "without the human there is no universe, the human brings the universe into being." I believe that Berry means in the last phrase that the possibility of knowing the universe as universe through self-conscious awareness was always present in the universe, but it was not until the human came into being that this dimension of the universe was activated. In this sense the human is a completion and fulfillment of the universe and knows the universe as it actually is. I would offer as support this statement in *Evening Thoughts*: "The human is the model for understanding the universe, as the universe is the model for understanding the human. For certainly humans have nothing, but what they receive from the universe." *Evening Thoughts*, 121.

²⁷ "The Great Story is **the story of the changing story**. Whenever a new discovery is made in the sciences, this creation story changes. Change is to be welcomed—not feared." Michael Dowd and Connie Barlow, "Five Unique Characters of the Great Story," available at http://thegreatstory.org/what_is.html (accessed June 24, 2008).

In the *Universe Story*, Swimme and Berry acknowledge that some of the science (and history) described in the book may change. "For instance, in our narratives of the emergence of the galaxies, and of prokaryotes, and of civilizations, we employ what we regard as the most convincing hypotheses, ever aware that in the future new evidence and deeper understanding might insist that alternative hypotheses be adopted." *The Universe Story*, 4.

²⁸ Continuing tensions between scientific cosmology and the philosophical cosmology of the Universe Story, however, may be expected. A current example of such a tension, previously discussed in text, is shown in how the Universe Story in the book by that name stresses temporality and irreversibility whereas in general relativity spacetime may be understood as atemporal.

²⁹ If this is true then it is equally clear that the interpretation given to the Universe Story in the first principle of Appendix 1 in *Evening Thoughts* covering "Twelve Principles of the Universe" is inaccurate or at least contradictory. In this principle the story of the universe is identified as the modern scientific story of the universe, a story which first became known in the 20th century. Specifically it states: "The universe in its full extension in space and in its sequence of transformations in time is best understood as a story, a story known in the twentieth century for the first time with scientific precision through empirical observation." The principle continues that the greatest need in our time is for an integral telling of this story, presumably the scientific story. *Evening Thoughts*, 145. As I have previously discussed, this first principle and the "Twelve Principles" in *Evening Thoughts* generally differs from Berry's traditional "Twelve Principles of the Universe" developed while he was at the Riverdale Center in New York. His first principle in the Riverdale version is "The universe, the solar system, and the planet earth in themselves and in their evolutionary emergence constitute for the human community the primary revelation of that ultimate mystery whence all things emerge into being." For the text of the Riverdale Twelve Principles and a discussion of the differences between those and the Twelve Principles in *Evening Thoughts*, see Herman Greene, "Comparing Thomas Berry's 'Twelve Principles of the Universe' written at the Riverdale Center (before 1994) with the 'Twelve Principles of the Universe' in *Evening Thoughts* (2006)," *CES Monthly Musings*, no. 9 (January 2008), available from the Center for Ecozoic Studies, Chapel Hill, North Carolina. The original Twelve Principles are also given in Thomas Berry, "Twelve Principles: For Understanding the Universe and the Role of the Human in the Universe Process," *Thomas Berry and the New Cosmology*, eds. Anne Lonergan and Caroline Richards (Mystic, CT: Twenty-Third Publications, 1987).

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³⁰ *The Universe Story*, 1.

³¹ *Ibid.*, 2.

³² *The Universe Story*, 23.

³³ *Ibid.*, 5.

³⁴ The most significant change in the twentieth century . . . is our passage from a sense of cosmos to a sense of cosmogenesis. . . . We have moved from that dominant spatial mode of consciousness, where time is experienced in ever-renewing seasonal cycles, to a dominant time-developmental mode of consciousness, where time is experienced as an evolutionary sequence of irreversible transformations. *Ibid.*, 2-3.

³⁵ "All that exists in the universe traces back to this . . . event [(the Big Bang)]." *Ibid.*, 21. While it is possible that the universe has its origin in a single event, the Big Bang, in my view the reality of this event as expressed in the hot Big Bang theory is not a necessary precondition for the conclusion that the universe is unified, multiform reality. For example, Alfred North Whitehead in his philosophy of organism and many others, including Albert Einstein, have held to this unity on both scientific and philosophical grounds without reliance on the Big Bang theory.

³⁶ *Ibid.*, 21.

³⁷ *Ibid.*, 23.

³⁸ *The Universe Story*, 23.

³⁹ Integral, as an adjective means: "1. of, pertaining to, or belonging as a part of the whole; constituent or component: integral parts. 2. necessary to the completeness of the whole: integral to his plan. 3. consisting or composed of parts that together constitute a whole. 4. entire; complete; whole: the integral works of a writer." *Dictionary.com Unabridged* (v 1.1). Random House, Inc., <http://dictionary.reference.com/browse/integral> (accessed: June 16, 2008).

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sions and have ignored the human dimension of the universe. [As a result] we have fractured our educational system into its scientific and its humanistic aspects, as though these were somehow independent of each other."³⁰ Science has identified "the world of reality [as] material and mechanistic in a way that "eliminate[s human] capacities for . . . intimate communion with the natural world . . ."³¹ In contrast with this scientific cosmology, for Swimme and Berry "Cosmology aims at articulating the story of the universe so that humans can enter fruitfully into the web of relationships within the universe."³² And their aim in *The Universe Story* "is to awaken those sensitivities . . . that enable a rich participation in the ongoing adventure."³³

The Universe Story has two major parts. The first concerns the development of the universe prior to humans and the second has to do with human emergence. In the first part of the book, the authors have a pattern of presenting aspects of the scientific story (physical cosmology) followed by philosophical reflections (philosophical cosmology) on the nature of the universe. I will present these reflections, for there we will find the universe in the Universe Story.

The Universe Story is the new cosmology to Swimme and Berry because science has changed how we look at and understand the "world" (meaning the entire cosmos) and has also changed and is changing dramatically the world (meaning Earth). The world as we have come to understand it through science is something different than that ever known by the primal peoples, peoples in the classical civilizations, and even modern peoples prior to the twentieth century. In the twentieth century the new post-modern physics of relativity and quantum mechanics came into being as well as (in part, as a result of the post-modern physics) new discoveries in astrophysics, geology, biology and all fields of science. Everywhere the sciences revealed an evolutionary, time-developmental universe pro-

ceeding through a sequence of irreversible transformations through the dynamics of nature itself. We live in a cosmogenetic universe, a universe with a story. This is the fundamental dimension of the new cosmology.³⁴

The Big Bang theory of the origin of the universe reveals, for them, a single originating event for our entire universe.³⁵ Thus the universe is a multiform development of a single reality.³⁶ Everything in the universe interacts with every other being in the universe and all are derived from some prior interaction in the universe. The universe cannot be understood apart from any being in the universe because all beings are expressions of the universe. This being the case, the universe can be understood not only from our understandings of how beings emerged in the universe, but also from our understanding of what those particular beings that emerged late in the universe's history say about the universe. The universe is no longer "out there" for humans, it is also "in here," in ourselves.³⁷ So we may ask,

"Given the existence of mountain wildflowers, what is the nature of the Flaring Forth at the beginning of time? Given Mozart's symphonies, what is the nature of the dynamics of the universe that could have led to such structure? Given the care with which a mother lark will nurture and protect her young, what is the universe made of? Given the direct influence humans have on the functioning of the planet, what are the long-range consequences human activity will have on cosmic evolution?"³⁸

The Universe Story goes about answering these questions and it finds:

- The universe is integral in its functioning.³⁹ In everything that acts, it is the universe acting.⁴⁰

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⁴⁰ Always and everywhere, it is the universe that holds all things together and is the primary activating power in every activity. . . . [T]he universe is not a thing, but a

mode of being of everything. Everything has its particular mode of being and its universe mode of being, its "microphase" mode and its "macrophase" mode. *The Universe Story*, 27.

- “Profound feelings . . . even [those] tinged with personal significance and with hints of destiny, are the mutual evocation of mountain, animal, world. Depth communication of primordial existence is the reality at the foundation of all being.”⁴¹
- Both “infinitely patient, slow processes and sudden, cosmic intensifications are required to carry the universe through the unfurling of its material-psychic adventure. . . . The universe is both violent and creative, both destructive and cooperative. . . . Resistance, energy, dreams: these are the sources of all violence. Another way of describing them is to speak of past, present, and future. . . . The universe thrives on the edge of a knife. . . . Every being that thrives does so in a balance of creative tension. . . . The universe is a multilevel web of different communities of beings with ancient and well-established orders of being. . . . Yet the universe brings forth new centers of creativity in this world of established relationships and long-honored traditions. . . . The universe has what can be called a sacrificial dimension. . . . Life includes in its essence hardships of many kinds. To refuse this, to refuse to accept what might be called legitimate suffering, is to opt for a reduced existence. . . . No intellectual resolution of the conundrum of suffering is possible or even desirable. . . . To eliminate the tension would be to eliminate the beauty.”⁴²
- Einstein’s *Cosmological Principle* states that “‘All places are alike.’”⁴³ “Our extension of the Cosmological Principle, which we will call for clarity the *Cosmogenetic Principle*, assumes that . . . the dynamics of evolution are the same at every point in the universe. . . . Cosmogenesis, as well as its

microphase complement, epigenesis, refers to structures evolving in time. . . . The second law [of thermodynamics] refers to the tendency in any closed system to increase its entropy [(disorder)]. . . . The Cosmogenetic Principle is complementary to the second law [and it] refers to the dynamic of building up order. . . . The Cosmogenetic Principle states that the evolution of the universe will be characterized by *differentiation*, *autopoiesis*, and *communion* throughout time and space at every level of reality. These three terms . . . refer to the governing themes and the basal intentionality of all existence Autopoiesis points to the interior dimension of things. . . . Things emerge with an inner capacity for self-manifestation. Even the atom possesses a quantum of radical spontaneity. . . . The movement from primordial molten rocks to mammalian consciousness is a radical one, certainly. But we must avoid regarding such consciousness as an addendum or as an intrusion into reality. . . . The universe is a single if multiform energy event: Everything comes forth out of the intrinsic creativity of the universe. . . . The sentience of today’s world is an ontological creation of the evolving universe. In former times it existed as a latent possibility; now it exists in its activated or historical realization. Because creatures in the universe do not come from some place outside it, we can only think of the universe as a place where qualities that will one day bloom are for the present hidden as dimensions of emptiness. . . . This interpretation of epigenesis—that qualities arise from emptiness, from the latent hidden nothingness of being—needs also to speak of the direct and intimate relationship between

⁴¹ Ibid., 48.

⁴² *The Universe Story*, 51-60.

⁴³ More specifically, the cosmological principle in physics means that “On large spatial scales, the Universe is homogenous and isotropic [(the same in all directions)].” Wikipedia contributors, “Cosmological Principle,” *Wikipedia, The Free Encyclopedia*, en.wikipedia.org/w/index.php?title=Cosmological_Principle&oldid=214095061 (accessed June 17, 2008).

the powers of early Earth and the potential sentience in such powers. The rocks and water and air, just by being what they are, find themselves flowering forth within sentient beings."⁴⁴

- The first cells of life on Earth, the prokaryotes,⁴⁵ in the shape of their bodies, in the processes within their lives, in the ordering sequences of their information determined in a basal sense so much of the four-billion year Earth story that was to follow. The most impressive power of these cells was that of memory—they remembered how they were created and displayed this memory every time they reproduced themselves. And as they reproduced themselves, through genetic mutation they brought new depth to differentiation. This creative differentiation could not be held by one member of the community of cells; the learning was freely shared and remembered.⁴⁶ Then emerged Eukaryotes, cells with nuclei, and multicellular plants and animals we know today.
- "Life's journey is shaped by three fundamentally related, though distinct, causes: genetic mutation, natural selection, and conscious choice (or niche creation)." The reality of "chance, random, stochastic, and error" give rise to mutations. "Both *stochastic* and *error* . . . refer to an opaque dimension of evolution—a process having no fixed goal, but a process of creativity haunted by a sense of direction, by the vaguest hint of the more fertile way. . . . Natural selection is life's power to sculpt diversity in a creative fashion. . . . Mutation reveals the reality of the random, or chance in the world, natural selection announces necessity. . . . Conscious choice, or niche creation,

is an example of the cosmological dynamic of autopoiesis. . . . A species always creates its own niche. . . . The environment is fixed . . . [b]ut it is also true to say that the species 'fixes' the environment by choosing one out of a potentially infinite number of niches to inhabit. . . . The power shaping life is a wild energy; an inner urgency to pursue a particular path of life; and an immense bonding process that insists upon intimate togetherness. [Species can neither imagine nor orchestrate their future forms.] Yet their movement into their future evolution [begins] with a commitment to a vision—a vision strongly felt but seen as if fleetingly and in darkness."⁴⁷

Thus, in these and other understandings presented, we come to know the universe in the Universe Story.

The Place of the Universe Story in Thomas Berry's Thought

I have been critical of the prominence of the Universe Story in the Berry community. I have argued that many have conflated Thomas Berry's thought and the Universe Story. I have tried to distinguish ecozoic culture and ecozoic society as areas of Berry's thought needing more attention. Researching and writing this article, however, has given me an opportunity to reassess the Universe Story and its place in Berry's thought.

Two thoughts come to mind. The first is that just as the Universe Story is an integral telling of the story of the universe, so Thomas Berry's thought is integral. While there are many dimensions to Berry's thought, his work cannot be divided up into distinct subdivisions for all revolve around a central theme: There is an evolving universe that has a psychic-spiritual, as well as a physical, dimension and we humans were been birthed by it, are part of it and are given a special role to play in it. From this perspective, Berry's work as a whole may be understood as developing a functional cosmology. The second is

⁴⁴ *The Universe Story*, 66-76.

⁴⁵ Prokaryote means "any of the typically unicellular microorganisms that lack a distinct nucleus and membrane-bound organelles and that are classified as a kingdom (Prokaryotae syn. Monera) or into two domains (Bacteria and Archaea)." *Merriam-Webster Online*, available at www.merriam-webster.com/dictionary/prokaryote (accessed June 17, 2008).

⁴⁶ *Universe Story*, 86-92.

⁴⁷ *Ibid.*, 125-138.

that there are many parts to Thomas Berry's work that are often difficult to separate out because they are so integrally woven into his central theme. They relate to what is an ecozoic society and they may not be given the attention needed if they are overshadowed by the Universe Story.

A Functional Cosmology

What does Thomas Berry mean by a functional cosmology? I think the best explanation he has given is this:

[A functional cosmology] is one that will provide the mystique needed for . . . integral earth-human presence. Such a mystique is available once we consider that the universe, the earth, the sequence of living forms and the human mode of consciousness have from the beginning had a psychic-spiritual as well as a physical-material aspect. We do not need such extrinsic spiritual interpretations of the earth process as are sometimes proposed. What we need is a sense of reverence such as we find with the great naturalists, or such as we find with some of the foremost scientists of our times Until technologists learn reverence for the earth, there will be no possibility of bringing a healing or a new creative age to the earth.⁴⁸

We are now undergoing great environmental stresses such as peak oil, global warming, deforestation, desertification, etc. There is a growing interest and market for green technologies, some of them genuinely beneficial. Yet, if we operate out of a use mode (or subject-object mode) of development, what Berry sometimes called the "technozoic" mode of development, we will not ask the right questions or develop sufficient answers for a viable human future. It is only when we see ourselves as an integral part of the Earth community, as a communion of subjects, that we will be to do this.

Berry says our psyches are guided by a "distorted dream of an industrial technologi-

cal paradise."⁴⁹ And he says "A new revelatory experience is needed, an experience wherein human consciousness awakens to the grandeur and sacred quality of the Earth process."⁵⁰ This revelation comes to us beyond our active thought as an expression of the dream of the Earth. Yet this inner urging may only be appropriated self-consciously by us in language. Thus, it is important that our language be adequate to the language of Earth, so that this dream, rather than being distorted, becomes a source of guidance and power. The Universe Story is the beginning of such a language, an integral language of the universe/Earth process.

I believe the major contribution of the Universe Story is that it gives a language for an integral understanding of the universe. It also has a liturgical function, but working with this aspect requires care because the Universe Story should not be taken as a literal scientific-factual presentation. There are aspects of the Universe Story, such as we live in a time-developmental universe and the universe is a communion of subjects not a collection of objects, that we have reason to believe are not changing. Our appropriation of these insights is derived in part from the modern scientific revelation and equally or more from ancient and contemporary humanistic understandings. We believe these philosophical insights form a foundation for understanding the universe and our place in it that will last even as our scientific knowledge of the universe continues to develop and change. These foundational insights are the new cosmology; they are the universe in the Universe Story.

Before leaving this topic a word needs to be said about Berry's understanding of science. In the last few years he has often stated, "science is not a cosmology," by which I believe he means what is covered in the preceding paragraph. Yet, one cannot read his published work without seeing that he intermixed science (physical cosmology) and cosmology (philosophical cosmology). Anne Marie Dalton does a wonderful job of presenting a larger picture of science as understood by Berry:

⁴⁸ *The Dream of the Earth*, 66-67. The following explanation is also very helpful. Berry considers the visionaries of the 1980s and writes: *But all of these writers fail ultimately in judging the present and in outlining a program for the future because none is able to present data consistently within a functional cosmology. Neither humans as a species nor any of our activities can be understood in any significant manner except in our role in the functioning of the earth and of the universe itself. We come into existence, have our present meaning, and attain our destiny within this numinous context, for the universe in its every phase is numinous in its depths, is revelatory in its functioning, and in its human expression finds its fulfillment in celebratory self-awareness. Neither the psychological, sociological, nor theological approaches is adequate. The controlling context must be a functional cosmology.* Ibid., 87.

⁴⁹ *The Great Work*, 201.

⁵⁰ Ibid., 165.

⁵¹ Dalton, *A Theology for the Earth*, 94-95, quoting Thomas Berry, "The Gaia Theory: Its Religious Implications," *ARC: The Journal of the Faculty of Religious Studies*, McGill University, 22 (1994). Dalton made these additional observations about Berry's relationship to science. [Berry] questioned the accepted premises governing the modern understanding of the nature of science. [His interpretation] that the scientific enterprise as driven by mythic visions undermined the idea of science as an objective activity unaffected by cultural, social or psychological factors. . . . Berry also criticized the scientific method as it had generally been understood since the seventeenth century. The emphasis on quantitative measurement and analytical reduction of wholes to their component parts skewed the notion of reality to a mechanistic one, which virtually excluded any consideration of the design of the whole. The new perception of scientific epistemology, on the other hand, recognized the subjective nature of all knowledge. The human relationship with nature would be that of a communion of subjects rather than a subject-object dichotomy. *Ibid.*, 78-79

In discussing the visionary power of dreams as the experience of "the depths of our own being and of the cosmic order," he made the following associations: *There we discover the Platonic forms, the dreams of Brahman, the Hermetic mysteries, the divine ideas of Thomas Aquinas, the infinite worlds of Giordano Bruno, the world soul of the Cambridge Platonists, the self-organizing universe of Ilya Prigogine, the archetypal world of C.G. Jung.* *Ibid.*, 84, quoting *The Dream of the Earth*, 197.

Footnotes continued to right

In elaborating on the significance of [James Lovelock's and Lynn Margulis'] Gaia theory, Berry summarized the way in which recent scientific theories and discoveries entered into his own vision. The benefit of the Gaia theory was the effort it represented to achieve a larger pattern of interpretation than is the common focus of scientists. He insists, however, that biological and chemical studies alone are not adequate to an understanding of the "superb achievement" of the emergence of the earth. The remainder of his discussion delineated in succession elements of the larger context to which he was referring: physics and cosmology, the psychic mode of human being and the mystical implications of what science does and discovers. Scientific inquiry has as its purpose "mystical communion," he said, despite the fact that scientists might well object to this understanding of their endeavors.

The discussion of the Gaia theory provided an occasion for Berry to summarize very succinctly the role that science in general played in his own program. He did not propose to work within established and acceptable (to the scientists generally) scientific norms. Science was for him a cultural and spiritual activity. It revealed what humans had in a sense known all along in the primal expressions and the archetypal spiritual images that survived in the unconscious. Scientific knowledge may not have been based on the same kind of experience as that of the ancients, but the interpretations bore a similarity. In his words:

[O]ur scientific inquiry . . . establishes a basis for a new type of religious experience differentiated from, but profoundly related to the religious-spiritual experience of the early shamanic period of human history.

With obvious reference to Paul Ricoeur's "second naiveté," he clarified further: "We experience the universe with the delight of our post-critical naiveté." Thus, Berry saw contemporary scientific activity to be the creation of a new mythic structure that could help redirect human attitudes and actions toward a more congenial human-earth relationship.⁵¹

An Ecozoic Society

I believe that Anne Marie Dalton was right when she wrote,

Underlying [Berry's] efforts was an unquestioned conviction that real change originated and was effected by cultural movements. Change occurred when visionary and comprehensive ideas or images . . . interacted with archetypal psychic sensibilities. . . . His motivation, assumptions and knowledge were brought to bear on what he saw to be the most devastating outcome of the kind of myths and images that empowered modern Western development.⁵²

It is also clearly correct to say that a new story of the universe was at the heart of Berry's proposal for cultural reform.

Yet, not giving attention to Berry's proposals for the many changes that would follow on such cultural reform would greatly diminish his work and its value. I call these Thomas Berry's work on an ecozoic society in all of its political, economic and cultural dimensions and in its relationship with a larger communi-

Footnotes, cont.

Berry's interpretation of cosmogenesis and of the human relationship to the natural world was primarily a mythic and/or metaphoric extension of scientific concepts and theories. He claimed that science was inherently mythic. Even terms such as

energy, life, matter, universe and gravitation have metaphoric and mysterious connotations. *Ibid.*, 84.

⁵² Dalton, *A Theology for the Earth*, 56.

ty of life. It is true that Berry wrote that the Universe Story is a functional cosmology,⁵³ but he also said that ecology is a functional cosmology.⁵⁴ In *The Great Work* he wrote:

Ecology is not a course or a program. Rather it is the foundation of all courses, all programs and all professions because **ecology is a functional cosmology**. Ecology is not a part of medicine; medicine is an extension of ecology. Ecology is not a part of law; law is an extension of ecology. So too in their own way the same can be said of economics and even the humanities.⁵⁵

And in *Evening Thoughts* he wrote:

“Ecology is a functioning cosmology. . . . [In education it] is *the course, the curriculum, the structure of the entire educational program.* It is the basis of medicine; it is the context for law. *Ecology* refers to the way the universe functions.”⁵⁶ If his writings on the Universe Story did not make it clear, Berry wanted to emphasize that he wanted cosmology brought down to Earth—moreover cosmology was of the Earth and how it functioned in our everyday world.⁵⁷

Alongside Anne Marie Dalton’s insight into Thomas Berry’s call for cultural reform, I would call attention to his statements that (1) the “central flaw” in human development is our “mode of consciousness that has established a radical discontinuity between the human and other modes of being and [has bestowed] all rights on the humans”;⁵⁸ and (2) “the historical mission of our times is to reinvent the human—at the species level, with critical reflection, within the community of life systems, in a time-developmental context, by means of story and shared dream experience.”⁵⁹

While the Universe Story is often offered as story and shared dream experience, it should also be understood that it is a source for critical reflection on how our species needs to reestablish its presence within the community of life systems in a world that proceeds through a sequence of irreversible transformations. It was certainly this for Berry as he wrote about the ecological age, technology, economics, education, religion, patriarchy, bioregionalism, wilderness, geography, ethics,

politics, energy, food, law, geobiological and cultural history, civilizational structure and orientation and more.

Thomas Berry set forth a comprehensive vision of a new, viable mode of human civilizational presence on Earth. It is the vision of an ecozoic society. While the Center for Ecozoic Studies does not disregard the Universe Story, it is this part of Berry’s work, the ecozoic society, that we have emphasized. It is reflected in our mission statement, “The mission of the Center for Ecozoic Studies is to offer a vision of an ecozoic society, and contribute to its realization through research, education and the arts.”

The Place of the Universe Story in the Great Work

Is it necessary to distinguish that part of Thomas Berry’s work which focuses on the Universe Story from that which focuses on the ecozoic society? Is one more important than the other? Are the potential problems with the Universe Story, such that it should be emphasized less?

Perhaps we can answer these questions with reference to what is “the Great Work.” Berry says the Great Work into which we and our children are born comes in response to the devastation of the planet caused by human activity. We are facing a breakdown in the life systems that can only be understood by comparison with events that marked the great transitions in the geo-biological eras of Earth’s history, such as the extinction of the dinosaurs and countless other species when the Mesozoic Era ended and our present Cenozoic Era began.⁶⁰ Our task is to move from our modern industrial civilization with its devastating impact to that of benign presence. It is the task of moving from the terminating Cenozoic Era into an emerging “Ecozoic Era” when humans will be present to the Earth in a mutually enhancing way and become functional participants in the comprehensive Earth community. He writes, “Cultural selection is now a decisive force in determining the future of the biosystems of the Earth.”⁶¹

I believe Berry is correct that the mythos of science must be changed. In as much as science as presently understood and the industrial technology and human aspirations and

⁵³ See, e.g., “[T]he story of the universe expresses a functional cosmology.” *Evening Thoughts*, 22.

⁵⁴ *Ibid.*, 30.

⁵⁵ *The Great Work*, 84 (emphasis added).

⁵⁶ *Evening Thoughts*, 30-31 (emphasis added).

⁵⁷ To restore a sense of the earth as matrix of the human, as primary norm of all human values and activities, is a difficult change, but one which cannot but have its own validation in confrontation with the devastating consequences of the existing mode of cultural coding. This new coding, which might be designated as “ecological,” might better be designated simply as a “functional cosmology.” The integration sought is not simply an ideal put forward as an abstract goal, but as a process that is already taking place throughout America. It is presently the most vital phase of the American Experience. Hundreds, even thousands, of Movements in this direction are already taking place in every phase of American life: in law and medicine, in agriculture, in architecture, in commerce and industry, in education. *The Dream of the Earth*, 121 (emphasis added).

⁵⁸ *The Great Work*, 4.

⁵⁹ *Ibid.*, 159.

⁶⁰ *The Great Work*, 3.

⁶¹ *Ibid.*, 4.

cultural influences to which it has given rise in the modern period are responsible for our current malaise, then the integral telling of the Universe Story, the new cosmology, is the antidote and healer. It will not, however, be such an antidote and healer if it is lost to the very understanding of science to which it serves as an antidote. We must understand where the universe is in the Universe Story.

Telling the story as a narrative intermixing of contemporary scientific understandings and philosophical understandings presents difficulties, because, as I have touched on earlier, Berry's cosmology is in significant ways at odds with the presuppositions of naturalistic science.⁶² When the Universe Story is told without awareness that such conflicts exist problems may arise in cross-cultural communication because traditional wisdom is also at odds with such presuppositions but not necessarily with Berry's philosophical cosmology.

Overemphasizing the scientific account of the development of the universe may have the effect of obscuring Berry's philosophical cosmology because it may be thought that the point of the story is primarily to validate the science rather than to bring about an understanding of the inner dynamics of the universe and the human place in it. Berry's cosmology does not have a stake in, for example, whether or not the Big Bang theory is true. Rather it has a stake in such understandings as the universe is characterized by subjectivity, diversity and communion, has a psychic-spiritual dimension from the beginning, and is interdependent and

time-developmental.⁶³ Berry's cosmological understandings may be presented without reference to the timeline given in the standard scientific account of the development of the universe. In such a presentation, stories from nature would be told to ground Berry's understandings, but not a serial narrative from the Big Bang to the present.⁶⁴

The scientific story is what it is. It may stand up for ages to come or be replaced by a new and different understanding. In my view the later parts of the story, parts in particular concerning Earth,⁶⁵ where we have more direct knowledge, will likely be more durable than those parts where the empirical evidence is slight . . . that "pesky 96% of the universe." The new cosmology may be presented using a serial narrative based on the scientific story, but it is not identical to it. The new cosmology is the philosophical cosmology in which science needs to function, not the physical cosmology of science. If I were to use the serial narrative in presenting the new cosmology now, I would probably say something like, "I want to tell you a story of wonder, beauty and intimacy, it is the story of our universe. I will tell you a story of the contemporary scientific understanding of the universe but I will go beyond science to discuss meaning and value. This is a story of a new cosmology for understanding the inner dynamics of the universe and our place in it." I would tell the story as a mythic telling of "the epic of evolution."⁶⁶

There needs to be an integral telling of the universe story and that this is essential to the

⁶² Berry's cosmology, for example, includes teleological causation (the universe is about something), pan-experientialism (subjectivity in all beings), the ultimate significance of time (irreversible sequence of transformations), and non-sensory perception (the dream drives the action) all of which are rejected by naturalistic science and much of contemporary Western philosophy.

⁶³ I find Alfred North Whitehead's philosophy of organism helpful in both comprehending and expressing these understandings. For a description of Whitehead's influence on Berry, see Dalton, *A Theology for the Earth*, 47-50. For a defense of cosmological understandings such as these, see generally David Ray Griffin's *Whitehead's Radically Different Postmodern Philosophy* (Albany, NY: SUNY Press, 2007). Chapters one and two of this book discusses how modern/enlightenment philosophy and post-modern deconstructive philosophies differ from the understandings given by such "process thinkers" as Berry, Chardin and Whitehead. While Griffin does not discuss Berry and Chardin, I believe there basic positions on the matters mentioned in the text accompanying this footnote are the same though their methods of arriving at their positions are different.

Footnotes continued to right

Footnotes, cont.

⁶⁴ Such a serial narrative is, in any case, a high level abstraction from the many, many parallel and simultaneous stories being told in nature. Every tree, every species, every bioregion tells the "great story" of the universe. Here is a liturgy that appeared in the bulletin of my church that expresses this:

CALL TO WORSHIP

LEADER: Tell me a story.

PEOPLE: **A story of where we are, and how we got here, and the characters and roles that we play.**

LEADER: Tell me a story.

PEOPLE: **A story that will be my story as well as the story of everything around me, a story that brings us together in a valley of community, a story that brings together the human family with every living being in the valley.**

LEADER: Tell me a story.

PEOPLE: **A story that brings us together under the arc of**

the great blue sky in the day and the starry heavens at night, a story that will drench us with rain and dry us in the wind.

LEADER: Tell me a story.

PEOPLE: **A story told by humans to one another, a story that the wood thrush sings in the thicket and the river recites in its downward journey.**

LEADER: We come to share our stories, grateful for the Surrounding Spirit which draws us together in songs of joy.

Bulletin of Worship, Binkley Memorial Baptist Church, Chapel Hill, NC, July 6, 2008.

⁶⁵ Our scientific knowledge of the physical aspects of Earth is to a large extent based on empirical data. The problems in our scientific knowledge of Earth comes more in understanding, life, consciousness, morality and sentience.

See footnote 20 for a discussion of the gradations in the empirical data available to science

Great Work. The purpose of this essay is to caution those who undertake the telling of this story to be mindful of the distinction between scientific cosmology and philosophical cosmology. They cannot be fully separated, nor should they be, but if one were to err on one side or the other in bringing about the kind of cultural change envisioned by Berry, I would emphasize the philosophical understandings such as “subjectivity, diversity and communion,” without over-identification with current scientific theories or “facts” derived from those theories.

Telling the Universe Story is very important in the Great Work. The Great Work is to re-integrate humans into the dynamics of Earth with the understanding that Earth is a communion of subjects and not a collection of objects. The Universe Story gives us language

for an integral understanding of human and nature and awakens awe at the grandeur of existence.⁶⁷ When thinking of the new cosmology, however, one should recall that Thomas has also said “ecology is a functional cosmology” and that our effort is to bring into being an ecozoic society.

Neither of these emphases (that on the Universe Story and that on an ecozoic society), however, can be reduced to the other, for in Berry’s writing there is an abiding theme of the “Great Self”—the universe, and the “small self”—our individual lives and communities. He follows the ancient Chinese in calling on heaven (the order of the universe) to be our guide, and also, perhaps, Jesus who prayed, “Thy kingdom come, on Earth as it is in Heaven.”

Footnotes, cont.

⁶⁶ Berry comments,

There are two ways for an adult to explain things to a child. One is with mythic explanations, such as are handed down to us through the earlier stories of the classical world or through the stories of indigenous peoples. The other is through the more scientific accounts that are now available to us. Apparently the true inner appreciation of things can be communicated only through story form whether mythic or epic. This has led some perceptive scientists to appreciate that the evolutionary story needs to be narrated as an epic narrative. An epic is a sequence of heroic deeds, generally with some historical basis, deeds of immense importance that are carried out with more than ordinary, even mysterious power. So the universe needs to be understood in its amazing sequence of transformations to produce the wondrous world about us. The coherent sequence of transformations narrated in understandable, non-technical, even literary language, this is what makes the entry of scientists into the epic form so acceptable to both scientists and to the more general reader.

Thomas Berry, “Foreword,” Dalton, *A Theology for the Earth*, viii.

I believe that the Universe Story is intended to offer such an epic.

⁶⁷ With regard to this awe, one might remember that Berry has not generally favored an exalted religious or mystical relation to the universe, but rather a reverence for Earth such as that expressed by Rachel Carson in *Sense of Wonder* (New York: HarperCollins, 1998), and Lewis Thomas in *The Lives of a Cell* (New York: Penguin, 1978.)

Cook's Corner

Eat Something Wild Every Day!

BY FRANK COOK

"The sad reality is that we are in danger of perishing from our own stupidity and lack of personal responsibility to life. If we become extinct because of factors beyond our control, then we can at least die with pride in ourselves, but to create a mess in which we perish by our own inaction makes nonsense of our claim to consciousness and morality."

-Bill Mollison, co-creator of the permaculture movement

"Even, or perhaps especially, if you live in a tiny apartment surrounded by the concrete jungle, you should always try to find simple ways to repair the earth, educate others, and prevent further destruction of the natural world."

-Heather Flores, author of *Food not Lawns*

"Knock, Knock"

"Who's there?"

More and more I hear the future knocking, prompting us to stand up and cooperatively take responsibility for our lives. My decades of exploration of the outer and inner realms have led me to question the basic premises of our "Western Civilization." As Gandhi said, when asked about what he thought of Western Civilization, "It would be a good idea."

Out of the Box

In the boxes of modern living I also found boxed thinking. It has been over 20 years now since I opened from that mindset out into the dynamic world. When I began this journey, I was motivated by a sad soul and sensitive digestion. As I traveled about trusting basic instinct, I could see more easily the manipulation of modern education.

Medical treatment is mistaken for health care, social work for the improvement of community life, police protection for safety, military poise for national security, the rat race for productive work Everywhere the hidden curriculum of schooling

initiates the citizen to the myth that bureaucracies guided by scientific knowledge are efficient and benevolent . . . instills in the pupil the myth that increased production will provide a better life.

-Ivan Illich from *Deschooling Society*

To cleanse from all this I spent several years going on vision quests and adventures eventually coming to my inner core. From there I began to grow out again relearning how to live. I soon realized that one of the main deceptions of our modern life is our economics of scarcity. Nature taught me her cycles of abundance and encouraged me to dance in them.

I began to see that the most advanced aspect of our modern Western living was a highly developed ego. The more I looked, the more I saw beyond those limitations of left-brained thinking. This has culminated during this last year studying Holistic Science at Schumacher College in Devonshire, England.

Plant Wisdom

In 1994 I went to a Rainbow Gathering in the national forests of Wyoming and the clinical herbalist 7Song led a huge group of us on

a plant walk. Though I had been a science major in college, I had never been on a wild plant walk. We walked for five hours that day and I met over 100 useful plants. Though I did not realize it at the time, I was also being introduced to allies who would be by my side wherever I traveled in the world.

One of the central roles of plants is that they are here to help nurture us into a new way of being. We could not be here without them. They are our elders. It is time for us to once again understand and honor that. This is hard to see through the veil of objectifying the world with reductionist science. Our scientific mindset of the last few hundred years has led us astray of the connection. Galileo may have succeeded in shifting our views of Earth being at the center of the universe, but we have done a poorer job of extricating ourselves. (A recent poll in America shows that 20% of adults still think Earth is at the center!) As the Native American Chief Seattle said, "We are but a strand in the web of life" and we are linked to all the other strands.

The sooner we can set aside the yolk of specialized training (read Buckminster Fuller's *Operating Manual for Spaceship Earth* for why this has come to be) and embrace multi-skilling ourselves, the more resilient we will be for the coming changes. What skills do you lack that keep you from being a more sustainable human being?

It is the basic skills which we modern humans are the most negligent in mastering: personal health habits, firemaking, shelter building, how to find water, knowing where we are, and, of course, knowing the plants about us. This is our challenge. We modern people who make up 20% of the world (and control over 80% of the "wealth") are being asked to humble ourselves and relearn who we are on this planet and embrace the coming Gaian Culture.

As I mentioned, our modern economy has been geared towards seeing scarcity as valuable. This has led to our believing that the more common something is, the less value it has. Taken to the extreme the elements such as air and water and earth are considered practically worthless. In a similar way plants that grow untended by humans are considered noxious, and ornamental trees that bear fruit are seen more as a nuisance for the "mess" they make on walkways and otherwise homogenous lawns. By being classified this way weeds are targeted for poisoning and eradication. This does not stop their proliferation for they thrive in disturbed ecosystems. But the Living Earth is despoiled in the wake of those who make war. Life would be much more pleasant if we adopted the approach of . . .



Don't Weed . . . Harvest!

It is an irony that plants full of nutrients are tossed aside to make room for the cultivated plants we are familiar with (and often contain less nutrition). Exotic invasives largely provide many of the solutions for satisfying our needs. They challenge us to use them faster than they can grow.

A prime example of a valuable weed is Lambsquarter (*Chenopodium spp.*) which is in the same family as spinach. S/he is dug up as a useless nuisance to be replaced by our culinary desire for spinach and yet in every way lambsquarter is nutritionally superior. Wonder and reflect on that irony.

If you must pull these weeds up, at least use them. Don't just toss them aside. Take them and eat them. Replant them somewhere else. They are gifts to us given freely by Gaia to sustain us—offered by no effort of our own. If you are pulling them up anyway, why not integrate them into your diet? And when you get this message and begin to have them in your diet, be creative in their use. Don't just plop them down naked on your guest's plate. Instead, incorporate them into dishes that are familiar and you will quickly win over your guest to this cuisine with a wild twist.

We have been trained here in the West to be passive observers, watching images of the world, clicking the mouse or the channel to go everywhere imaginable. But this disengaged approach to life leaves our bodies atrophying and our spirits deadened. One of the most profound acts to take in these modern times is to mindfully (heartfully and spiritfully) harvest a plant from the wild.

The shift needs to occur at the cellular level. That is why this article has its title. By eating (and drinking) wild plants each day you will begin to change cell by cell. You literally are what you eat. As I have said, the plants are here to help us. They have been here all along!

But where to begin? The famous herbalist Susun Weed says what you need most grows out your back door. So start there and slowly move forth into the world. Follow the hedgerows, they will lead you back into natural living. Books and other media can be helpful, but don't solely rely on them. This is not an exercise in isolationism or survivalist mentalities. We are . . .

Not Islands unto Ourselves

We have had enough of that mentality. We are all in this together. Food security is community. Transformation is upon us. As Rob Hopkins says in his recent work, *The Transition Handbook*, about a positive approach to peak oil and climate change, "Small is inevitable . . . I am not afraid of a world with less consumerism, less stuff and no economic growth. Indeed I am more frightened of the opposite . . ."

I hear the insights of James Lovelock telling us to "Adapt!" along with the changing climate. Thomas Berry extols us to "embrace the Ecozoic Era upon us and step into the 21st Century." Satish Kumar points out, *when an apple comes into fruit on a tree it is freely offered for the deer and bear and bees and worms*. Is it not time for us to embrace the abundance of nature? Basic food should not be a commodity, but a human right. Our true elders are calling us out to participate in this evolutionary opportunity. All the problems of the world are not solved by bringing wild food into our lives, but enormous changes would come from that simple, personal act. It is an important first step. Together we can make the changes needed. Walk out into the world, ask "who's there?" and listen. It is time for us to step out of our bubbles back into the world and reject convenience which has turned out to be a path to death. Eat something wild everyday and dance with nature into our Gaian future.

Poems

BY ELLEY SHELP-PECK

I Think

I think that the Earth loves me
I think the Earth is beautiful
I think I know everything
I think, I think, I think

Dripity Droppity

Drip Drop
do you hear the water
save the rivers, lakes, ponds, and streams
Drip Drop
save the water



The Forum

Letters to the Editor

Letter, dated July 26, 2008, from Mike Bell concerning "Where is the Universe in the Universe Story" by Herman Greene (TE 1)

Dear Herman,

Thanks for offering me the chance to comment on your essay, "Where is the Universe in the Universe Story?" I found it quite interesting and very stimulating.

This essay raises many issues about Berry and Swimme's thinking. In some areas I agree with your interpretation of their thinking; in others I suggest the need for further clarification; and in still others I disagree with your interpretation.

What I'll try and do is list the issues one by one, generally working my way down through the essay.

1. *You mention that you have problems about the importance of the Universe Story in bringing about change.*

Though you mention that the Universe Story has had a very positive effect on many lives, you don't deal directly with the inability of the Universe Story to effect change, nor give us any evidence of its inability to bring about real change. If this point is important for you, you might give us some examples of where it has failed to bring about change.

2. *You expand on the first point by your mentioning experience with Dr.*

Knitter. He describes the Universe Story as a Meta-Narrative. I can't tell whether you agree with him or not, nor do I understand whether this is an illustration of your first point—the inability of the Universe Story to affect change across cultures as a meta-narrative. As it now stands, the story of your discussion with Dr. Knitter illustrates how you began to have doubts about the Universe Story.

But it becomes a bit of a red herring in terms of you overall theme without a more direct application to the Universe Story. Allow me a personal reflection.

As you know, I've spent most of my adult life working with aboriginal folks in the Arctic regions of northern Canada, and continue to do so. (I'm currently involved with the Tlicho (Dogrib) people helping them develop their cosmology so they can use it as a guide to in developing their self-government.) The Inuit, the Tlicho and other northern Dene peoples have their own, distinct cosmologies. All cosmologies are culturally driven. So the real question is whether there is such a thing as a universal meta-cosmology. I don't think there is. And I don't think that Berry and Swimme say there is. (They are not saying, for example, that the cosmology expressed in the Universe story will become *the* common cosmology for the whole world.) But I do think they are saying that in our modern world all cosmologies, to retain their relevance, have to address the realities of modern science. If they don't, their children who are watching television, are going to treat their origin stories just like Disney fairy tales. Though I have no statistical evidence for this, I think the response of some aboriginal communities and the acceptance of Berry's thought in different parts of the world would indicate that it has some ability to speak across cultures.

As for Knitter's thought that people can be united by "common ethical callings" around major problems, this is a whole other matter. After years of observing and participating in struggles between aboriginal communities, corporations and governments in such issues as mines, pipelines, extractive resource development, hunting rights and environmental protection, I have come to appreciate the importance of negotiating not on the basis of problems or issues, but on the basis of common interests and common ground. And, as my friend Tom Keevey, likes to say, those who are seeking a common ground in terms of their self interests must begin by realizing that they are standing on it.

3. ***You have concerns about basing the Universe Story on the Big Bang and you go into this quite extensively.*** First of all I don't think Berry and Swimme base their story on the Big Bang or use it as *the foundation* of the Universe Story or of their cosmology. Though they use the Big Bang to help illustrate the Universe Story, they see science as changing (as you have pointed out). So the lengthy discussion on the big bang, while interesting, is not to the point. Cosmology, which is the point, existed long before science. Berry has continually stated that science is not a cosmology. What is important is that critical reflection must also include reflection on current science, whatever that might be.
4. ***There seems to be a real ambivalence or confusion in regard to science in general.*** In the first part of your paper you seem to indicate that the Universe Story places too much emphasis on the importance of science. You mention in the middle of your essay, "*It seems to me that the statement that the Universe Story is based on empirical science, especially those parts pertaining to the early uni-*

verse, is misleading." But I see this as a straw-man. I may be mistaken here but I don't think Berry and Swimme made such a statement. If someone else has said it—for example other members of the Berry community—it should be referenced. Interestingly the next part of the paper seems to recognize the importance of science in explaining the Universe Story.

Toward the end you indicate "*These insights, (derived in part from modern scientific revelation), . . . form a foundation for understanding the universe and our place in it even as our scientific knowledge of the universe continues to develop and change. These foundational insights are the new cosmology. They are the universe in the universe story.*"

After making this statement, you seem to switch back again: you refer to the danger of intermixing contemporary scientific understanding and philosophic understandings in telling the story as a narrative. And you follow this by stressing that you start your telling of story of the universe with the physical universe (presumably using science and, I would suggest timelines) and go beyond it to talk about meaning and value.

Herman this is a key area where either you are not explaining the relationship between physical science and the Universe Story—or I'm just not getting it. It might be a bit of both.

5. ***You express a concern that the Universe Story overshadows the Ecozoic Era,*** but you give no examples. Some specific examples would be helpful. I know this is a real concern of yours and I think there might be a logical explanation. The Ecozoic is part of the Universe Story but it is the end part—the part that is still emerging. We know very little about it in practical terms compared to the preceding part—say the Cenozoic Era. So the story of the Ecozoic is still in its infancy. It is going to be "over-

shadowed" by the rest of the Universe Story—but that is quite natural and is not meant to slight the Ecozoic. To use an example, it is much easier for historians to tell us the story of America since 1776 than it is for them to tell us about the historical significance of the two terms of George W. Bush. So if they write books on the history of America since 1776, most of it is going to "overshadow" the current administration.

6. *You indicate that it is important to sort out the parts of the Universe Story that are important to the Ecozoic Era.* This part I don't understand. You note that the Universe Story is an integral telling of the story of the universe and Berry's thought is integral—his work cannot be divided up into distinct subdivisions. But then you try and divide it up by indicating that some parts—which remain for the most part nameless as far as I can see—are needed to explain the Ecozoic society. I think it is possible to distinguish *intellectually* the Ecozoic part of the Universe Story from the earlier parts of the Universe Story, but they are they are both parts of the same story. So, though I can distinguish between the beginning, middle and end of any story, I think it is impossible to say this part relates specifically to the Ecozoic and this other part doesn't relate to the Ecozoic. Here I think the danger is the problem that arises from reductionism.
7. *The preference for a philosophical cosmology of the universe story.* You complain that the real problem with the Universe Story is the mix of science with philosophy—and you prefer philosophy. But the reality seems to be that, according to Anne Marie Dalton and most everyone else including yourself (I suspect), there is no real comprehensive philosophy in the Universe Story. There was never intended to be. The telling of the

story is "the philosophy." What you see is what you get. You seem to believe that while the science is ever changing the philosophy is somehow unchanging or universal and not susceptible to the kinds of changes that science is susceptible to. Given the number of philosophers down through human history and the number around today who disagree with one another, I would disagree your assumption.

8. *The issue of the meaning of "integral" in "the integral telling of the story of the universe."* In footnote 29 you indicate that the interpretation given to the Universe Story in *Evening Thoughts* is inaccurate or at least contradictory. Since Thomas Berry is the author of *Evening Thoughts*, and this is his latest book, I find this comment a bit presumptuous. For most of us, the time lapse between Thomas Berry's work in Riverdale, New York and his work on *Evening Thoughts* would suggest that his thinking had developed over time. But this is not your interpretation. If I reviewed, say, three drafts of this paper, I would take the final draft as your final word. But you don't do this in the case of the first principle in *Evening Thoughts* and you don't explain why. In light of the comments you have made about "inaccurate and contradictory," it would be helpful if you did.

When you make reference to "the integral telling of the story" in *Evening Thoughts* I don't assume, as you do, that the word "story" refers just to the physical universe. I assume that, in using the word *integral*, Berry is referring to science, myths, dreams, arts, culture—all aspects of the human enterprise. The whole point of an "integral story" is that it can embrace all aspects of critical reflection and shared dream experience. I think this interpretation is consistent with what he has said elsewhere. He has always

indicated that the story has been known by indigenous peoples long before modern science. When he indicates that, the Twentieth Century is the first time the *“story has been known with scientific precision through empirical observation”* he is not saying that **The Story** is, in essence, **the scientific story**. He is saying that this is the first time the story, known from time in memoriam among indigenous peoples, has also become known *through a new mode of knowing—modern science*.

Herman, in conclusion, here is the way I see it.

There are two great elements to Berry’s thought: the Universe Story and the Ecozoic Era. They are intimately linked and must be integrally consistent. They are both part of the same cosmology. Together they are more than the sum of their individual parts

Berry and Swimme see certain benefits to linking their cosmology in some way to modern science which is not a cosmology in itself. Science has a role to play both in the Universe Story and

in the creation of the Ecozoic Era. Critical reflection demands that the reflection include a reflection on the role of science—whatever science, which is always changing, has to say at any given time.

There is symbiotic relationship between science and cosmology. There is also a symbiotic relationship between philosophy and cosmology. Because the Universe Story and the Ecozoic Era are integral to one another, we cannot use a reductionist approach in our analysis, nor can we use a deficit model to guide our reasoning. The real challenge is not figuring out what’s wrong with the concept of the Universe Story, or what’s wrong with the concept of the Ecozoic Era. The real challenge is how to join the two together in an integral approach.

This may be overly simplistic—but this is the way I see it.

As ever,

Mike

Contributors to this Issue

Thomas Berry is a geologist and author of *The Great Work: Our Way into the Future* (Bell Tower, 1999), and *The Dream of the Earth* (Sierra Club, 1988).

Mike Bell of Inukshuk Management Consultants specializes in community and organizational development. He has worked with Dene (Indian) and Métis communities in the Northwest Territories, and with Inuit communities in Nunavut, Canada. In recent years much of his work has been with land claims organizations and/or aboriginal groups developing their self-government institutions.

John P. Cock is a writer, speaker, retreat guide, and daily reflection blogger. With his wife and their two sons, he has worked on integral development in many places in the USA, Australia, Indonesia, Malaysia, and India.

Mary Dalton lives close to the Monterey Bay National Marine Sanctuary in Santa Cruz, California. She likes to paint landscapes in watercolor and oil and draws much of her inspiration from the central coast bioregion of California.

Herman Greene is President of the Center for Ecozoic Studies, founding Executive Director of the International Process Network, and a practicing business lawyer.

Ellen Howie has been using artistic reflection and expression in both her personal life and in her work as a Registered Nurse. She is untrained and enjoys encouraging people of all ages to be the artist they already are.

Tom Jablonski has worked for over twenty years as a civil/environmental engineer in industry, consulting, and government. He is a regular contributor to The Servant Leadership Blog located at <http://servantleadershipblog.com>, and his writing has appeared in *The National Catholic Reporter*.

Fred Lanphear, PhD, was a Professor of Horticulture at Purdue in the 1960's, a facilitator of community development with the Institute of Cultural Affairs in the 1970's and 1980's, and an educational administrator in alternative healthcare in the 1990's. He currently designs and creates sacred landscape space. His social activism focuses on his role as an Earth Elder. Fred is a co-founder and resident of Songaia Cohousing Community and is active in regional and national intentional communities organizations.

Ming Lee, BA, MS, PhD, is a lecturer at Beijing Forestry University (BFU) on psychology and Chinese philosophy, especially for Chinese medical philosophy and oriental psychology. His work links psychology, spirituality, social science and

CAM (complementary alternative medicine) through presentations and over 60 publications.

Alice Loyd is recently retired as Director of North Carolina Interfaith Power & Light, the environmental justice program of the North Carolina Council of Churches and affiliate of the 28-state IPL national organization. A member of the editorial board of the Center for Ecozoic Studies, she is also active in Grassroots Energy Alliance, a multi-ethnic coalition working to create a just, green economy through local initiatives.

Angela Manno is an internationally exhibited artist whose work is in the permanent fine art collections of NASA, the Smithsonian Institution and in private collections around the world. See www.angelamanno.com. She conceived and is editing *Planetary Perspectives*, a collection of original essays and interviews with visionaries who are laying the foundation for sustainable human presence on this planet. She studied Earth Literacy at Genesis Farm and is developing a teachers' manual with accompanying CDs for her course, "Eco-Spirituality & Action."

Jay McDaniel is Professor of Religion and Director of the Steel Center for the Study of Religion and Philosophy at Hendrix College in Conway, Arkansas. He is the author of several books, including *Living from the Center: Spirituality in the Age of Consumerism* (Chalice Press, 2000) and *With Roots and Wings: Christianity in an Age of Ecology and Dialogue* (Orbis 1995).

Elley Shelp-Peck is a third grader at Southwest Elementary School. She is a resident of Durham, NC. She has a love of rocks, birds, horses, dogs, and everything nature. Her hobbies include dancing, singing, hiking, and bouldering. She is always distraught when she sees trees being taken down for development. She often wonders what will happen to the animals now that they have lost their homes.

John Surette, SJ offers retreats and workshops at the interface of cosmology and spirituality and expects that an enrichment will emerge from a serious engagement with both.

Tim Watson is an eco-restorative architect specializing in designing "net zero" energy homes which also contribute a "net positive" restorative impact on the Earth's natural systems. He is committed to a new form of architecture that produces an ecological rejuvenation of soil, rainwater flows, and people, thereby seeing buildings serve as eco-restorative components to the natural world. He is currently practicing in Hillsborough, NC, in concert with his wife, a restorative landscape designer.

Twelve Understandings Concerning the Ecozoic Era

The Nature of the Universe

1. *The Unity of the Universe.* The universe as a whole is an interacting community of beings inseparably related in space and time. From its beginning the universe has had a psychic-spiritual dimension. The universe is a communion of subjects not a collection of objects.
2. *Modes of Expression.* The universe expresses itself at all levels through communion (intimacy, interrelatedness), differentiation (diversity), and subjectivity (interiority, self-organization).
3. *Cosmogogenesis.* The universe is a creative, emergent, evolutionary reality that has developed from the time of the primordial flaring forth, and is still developing, through a sequence of irreversible transformations.

Earth and Its Current Dilemma

4. *Earth.* Earth is a one time endowment in the unfolding story of the universe.
5. *The Current Dilemma.* The effects of human activity on Earth have become so pervasive and invasive that the survival and health of the Earth community now rest on decisions being made, and actions being taken, by humans.
6. *Transition to the Ecozoic Era.* There is a need to move from the current technozoic period where Earth is seen as resource for the benefit of humans, to an Ecozoic Era where the well-being of the entire Earth community is the primary concern.

Three Key Building Blocks

7. *The New Story.* The New Story, the narrative of the evolutionary development of the universe from its primordial beginnings to the emergence of the Ecozoic Era, offers a new cosmological basis for understanding the universe, the role of humans in the universe process, and the human mode of civilization presence.

8. *Bioregionalism.* Bioregionalism, care for Earth in its relatively self-sustaining geo-biological divisions, reorients human activity in developing sustainable modes of living, building inclusive human community, caring for the rights of other species, and preserving the health of the Earth on which all life depends.
9. *Ecological Spirituality.* Ecological spirituality, presence to the primal mystery and value of nature and to Earth as a single sacred community, provides a basis for revitalizing religious experience and healing the human psyche.

Special Contributors to the Ecozoic Era

10. *Women, Indigenous People, Science, and Humanistic and Religious Traditions.* The wisdom of women, indigenous people, science and classical humanistic and religious traditions will have an important role to play in redefining concepts of value, meaning and fulfillment, and in setting norms of conduct for the Ecozoic Era.
11. *The Earth Charter.* The Earth Charter provides a comprehensive set of values and principles for the realization of the Ecozoic Era.*

The Great Work

12. *The Great Work.* The epic task, or “Great Work,” of our time is to bring into being the Ecozoic Era. It is a task in which everyone is involved and from which no one is exempt, and it will require change in every aspect of human society. On it the fate of the Earth depends, and in it lies the hope of the future.

*The Earth Charter may be viewed at www.earthcharter.org



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